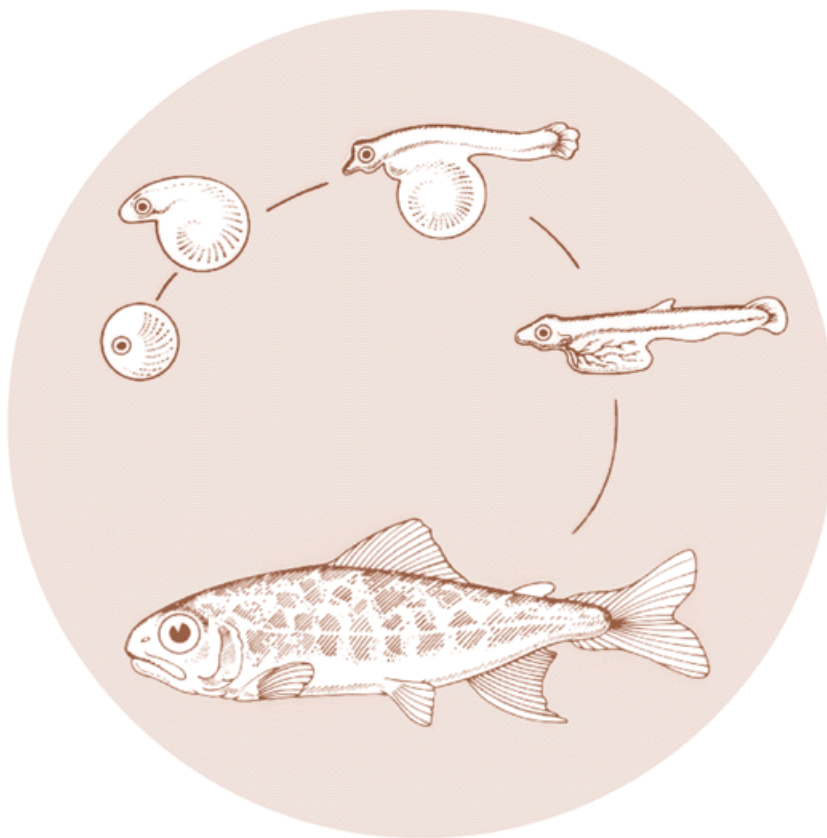


December 1994

# ANNUAL CODED WIRE TAG PROGRAM OREGON MISSING PRODUCTION GROUPS

Annual Report 1994



DOE/BP-01610-3



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**ANNUAL CODED WIRE PROGRAM  
OREGON MISSING PRODUCTION GROUPS**

**Annual Report  
1994**

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Project No. 89-069  
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December 1994

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## ABSTRACT

This annual report is in fulfillment of contract obligations with Bonneville Power Administration which is the funding source for the Oregon Department of Fish and Wildlife's Annual Coded Wire Tag Program - Oregon Missing Production Groups Project.

Tule brood fall chinook were caught primarily in the British Columbia, Washington and northern Oregon ocean commercial fisheries. The up-river bright fall chinook contributed primarily to the Alaska and British Columbia ocean commercial fisheries and the Columbia River gillnet fishery. Contribution of Rogue fall chinook released in the lower Columbia River system occurred primarily in the Oregon ocean commercial and Columbia river gillnet fisheries

Willamette spring chinook salmon contributed primarily to the Alaska and British Columbia ocean commercial, Oregon freshwater sport and Columbia River gillnet fisheries. The up-river stocks of spring chinook contributed primarily to the Columbia River sport and gillnet fisheries.

The up-river stocks of Columbia River summer steelhead contributed primarily to the Columbia River gillnet and in-river freshwater sport fisheries.

The Columbia River early stock coho contributed well to the Oregon ocean sport and commercial fisheries. The 1986 to 1990 brood years of coho released in the Umatilla River survived at an average rate of 1.82% and contributed primarily to the Washington, Oregon and California ocean sport and commercial fisheries and the Columbia River gillnet fishery. The 198'6 to 1990 brood years of coho released in the Yakima River survived at an average rate' of 0.94% and contributed primarily to-the Washington, Oregon and California ocean sport and commercial fisheries and the Columbia River gillnet fishery.

Survival rates of salmon and steelhead are influenced, not only by factors in the hatchery, disease, density, diet and size and time of release, but also by environmental factors in the river and ocean. These environmental factors are controlled by large scale weather patterns such as El Nino over which man has no influence. Changes in rearing conditions in the hatchery over which man has some limited influence do impact the survival rates, but these impacts are insignificant in comparison to the impacts caused by the weather, river and ocean environmental factors over which-man has little or no influence. Man could have some influence over river flow conditions, but political and economic pressures generally out weigh the biological needs of the fish.

Brood years of salmon and steelhead that were in the ocean during the 1983 El Nino event exhibited poor survival all along the Pacific coast of California, Oregon and Washington. However, stocks of chinook and coho that entered the ocean in the fall of 1984 following the El Nino experienced remarkably improved survival rates. In some instance, tule fall chinook experienced survival rates almost ten time higher than for the previous brood years of the same stock. Coho salmon released in the Columbia River in "normal" years generally experienced better survival rates when released later in the spring. However, during years of El Nino, ocean conditions,, coho released late survived very poorly and coho released earlier in the spring survived better.

## **INTRODUCTION**

The Columbia Basin Fish and Wildlife Program Section 203 (a) proposes an interim goal of doubling runs of salmon and steelhead in the Columbia Basin. Doubling means increasing the current run size of 2.5 million to 5 million adult fish. As part of this effort Section 206 (c) states an objective of exploring methods for substantially increasing and improving hatchery production at existing hatcheries. Section 206 (e)(1) states Bonneville shall fund collection of Columbia Basin hatchery data for anadromous fish. These data will include at a minimum: number of returning adults; disposition of returning adults; source and description of brood stock; actions to maintain genetic diversity; and size, location and time of release of juvenile fish.

A system of monitoring and evaluation is necessary to measure present and future levels of fish production by various hatchery and natural fish production components if we are going to be able to evaluate the success of this program in attaining the goal of doubling the size of fish runs.

In September 1989 the Oregon Department of Fish and Wildlife received a grant from the Bonneville Power Administration to begin a project of annually coded-wire-tagging missing production groups of anadromous salmonids not currently tagged. Some groups of production fish were already being tagged-by other programs, so this contract consisted of filling in the missing production groups for the future data base. This project began in 1990 coded-wire tagging groups of juvenile anadromous salmon produced at Oregon hatcheries,

Tagging will enable evaluation of survival and contribution rates. As the fish mature and are captured in various fisheries or return to release/recapture facilities, they are sampled to recover coded-wire tags. All recoveries of coded-wire tagged fish are reported to the Pacific States Marine Fisheries Commission. Release and recovery information is stored along with sampling and mark/unmarked release ratios. This information is then used to estimate survival rates for each production lot of fish reared and released at each hatchery. The number and

rate that each hatchery production group of fish contribute to the various fisheries is then estimated by recovery area and brood year. This information is then used to evaluate, effectiveness of each hatchery and various rearing and release practices conducted by the hatcheries. Evaluation of the various hatchery and natural production projects will be needed to measure the effectiveness of any mitigation program and to help direct future efforts in maintaining or enhancing fish runs in the Columbia Basin. This information will also be valuable to salmon harvest managers in developing scenarios that will allow harvest of excess hatchery fish while protecting threatened and endangered natural stocks.

## Methods and Materials

The goal of this program is to develop the ability to estimate hatchery production survival values and evaluate effectiveness of Oregon hatcheries. To accomplish this goal, work has progressed under three objectives.

Objective 1. Implement the project by tagging missing production groups within hatcheries to assure each production group is identifiable to allow future evaluation upon recovery of tag data.

Objective 2. Recover coded-wire tags from snouts of fish tagged under Objective 1.

Objective 3. Prepare an annual report for all Oregon fish hatcheries in the Columbia Basin in a Propagation Evaluation Format. The annual report will include a Propagation Evaluation Summary format for each tag code released by an ODFW hatchery in the Columbia Basin. The hatchery summary will include estimates of survival and contribution for each hatchery represented by a coded-wire tag release group. The information will be obtained from the latest information available on the Pacific States Marine Fish Commission's computer data base at the time of report preparation.

## RESULTS

Objective. 1. We completed coded-wire tagging and ad-clipping a total of about 1.4 million juvenile 1992 and 1993 brood spring and fall chinook and coho salmon (Table 1). Of this total, the USFW Service tagged 50,413 coho for us at their Eagle Creek Hatchery. The total represents, 26 different tag groups. ODFW's estimated total operational costs (without administrative overhead) averaged between \$70 and \$112 per thousand fish tagged.

Table 1. Fish Tagged and Respective Estimated Operational Costs.  
 -(August. 1, 1993 to July 31, 1994)

| Act # | Period   | Location      | Brood | Sp. | CWT'd     | Gross | \$/K. | Tot. \$ |
|-------|----------|---------------|-------|-----|-----------|-------|-------|---------|
| 05    | Oct, 93  | McKenzie      | 92    | CHS | 588,539   | 6     | \$101 | 59,240  |
| 06*   | Aug, 93  | Clackamas@SS  | 92    | CHS | 27,173    | 1     | \$112 | 3031    |
| 07    | Nov, 93  | Sandy         | 92    | Co  | 105,529   | 3     | \$72  | 7,643   |
| 08    | Sept, 93 | Cascade       | 92    | Co  | 165,321   | 6     | \$70  | 11,504  |
| 09*   | Oct, 93  | Eagle Creek   | 92    | Co  | 50,413    | 2     | -     | -       |
| 10    | June, 94 | Bonneville    | 93    | CHS | 53,340    | 1     | \$72  | 3,784   |
| 01    | Apr, 94  | Big Creek     | 93    | CHF | 106,536   | 2     | \$87  | 9,228   |
| 02*   | Mar, 94  | Bonneville    | 93    | CHF | 53,371    | 1     | \$81  | 4,307   |
| 02*   | July, 94 | SS@Willamette | 93    | CHS | 50,061    | 1     | \$83  | 4,171   |
| 03    | Apr, 94  | Stayton       | 93    | CHF | 55,801    | 1     | \$82  | 4,561   |
| 04    | May, 94  | Clackamas@Ox  | 93    | CHS | 107,310   | 2     | \$81  | 8,734   |
|       |          |               |       |     |           |       |       |         |
|       |          | TOTALS        |       |     | 1,363,394 | 26    |       |         |

\*Act#06 ODFW cost center 08423600/322003

\*Act#09 Coordinated tagging with USFW Services

\*Act#02 Modified because of a single release time at Bonneville and the need to ID S. Santriam CHS raised at Willamette hatchery.

Objective 2. We completed processing a total of 16,951 tags at the laboratory in Clackamas. The total consisted of fish from sport, commercial, ceremonial, hatchery, spawning ground surveys, and miscellaneous other fisheries (Table 2). We verified 3,336 ODFW tags recovered and returned to us by other agencies.

Table 2. CWT's Recovered at Clackamas. (Sept. 93 to August 94)

| FISHERY               | Sept  | Oct   | Nov   | Dec | Jan   | Feb   | Mar | Apr | May | Jun | Jul   | Aug | Total  |
|-----------------------|-------|-------|-------|-----|-------|-------|-----|-----|-----|-----|-------|-----|--------|
| River Sport           | 64    | 16    | 66    | 113 | 97    | 4     | 94  | 191 | 232 | 12  | 9     | 52  | 950    |
| Test Fishery          | 50    | 0     | 0     | 0   | 0     | 0     | 0   | 0   | 24  | 0   | 0     | 0   | 74     |
| Estuary Sport         | 161   | 4     | 0     | 0   | 0     | 3     | 0   | 0   | 0   | 0   | 0     | 0   | 164    |
| Treaty Gillnet        | 849   | 632   | 10    | 0   | 0     | 0     | 47  | 0   | 0   | 0   | 0     | 0   | 1,538  |
| Non-Treaty Gillnet    | 108   | 534   | 0     | 0   | 0     | 1     | 134 | 0   | 0   | 0   | 0     | 0   | 777    |
| Youngs Bay Gillnet    | 392   | 141   | 41    | 0   | 0     | 0     | 0   | 0   | 28  | 0   | 0     | 7   | 609    |
| Ocean Sport/Troll     | 1,013 | 0     | 112   | 107 | 0     | 6     | 0   | 0   | 0   | 0   | 141   | 0   | 1,379  |
| Hatchery Returns      | 66    | 2,091 | 2,638 | 539 | 2,263 | 1,003 | 516 | 0   | 0   | 279 | 382   | 120 | 9,897  |
| Spawning Ground       | 0     | 109   | 318   | 6   | 50    | 293   | 15  | 0   | 0   | 0   | 0     | 0   | 381    |
| Smolt Recoveries      | 0     | 0     | 0     | 0   | 0     | 0     | 0   | 0   | 32  | 0   | 519   | 0   | 551    |
| Ceremonial/Subistence | 0     | 46    | 0     | 0   | 0     | 0     | 0   | 0   | 104 | 24  | 14    | 0   | 188    |
| TOTAL                 | 2,703 | 3,569 | 3,185 | 765 | 2,410 | 1,310 | 806 | 191 | 420 | 332 | 1,079 | 181 | 16,951 |
| Verifications         | 156   | 6     | 632   | 71  | 587   | 0     | 0   | 34  | 0   | 0   | 1,070 | 780 | 3,336  |



Objective 3. We prepared summaries of available coded-wire tag recovery information' for all groups of tagged fish released from Oregon Department of Fish and Wildlife hatcheries in the Columbia basin and supplied them in the Propagation Evaluation Format to the Bonneville Power Administration Program Manager. Summaries of the coded-wire tag recovery and survival information are presented in Appendix Table 1. Charts depicting the latest five year average distribution of catch and estimated survival rates for each stock and hatchery are presented in Figures 1 - 52.

## Discussion

The average percent recovery (by fishery) for the last 5 completed brood years (chinook 1984 to 1988 broods; coho 1986 to 1990 broods; steelhead 1985 to 1989 broods) are presented in Appendix Table 1.

### Big Creek Hatchery

Big Creek Hatchery is located 2 miles south of Knappa off Highway 30 near the mouth of the Columbia River. The hatchery was originally built in 1939-41 and was operated by the Oregon Fish commission. Big Creek Hatchery rears and releases tule and Rogue fall chinook, coho salmon, and winter steelhead.

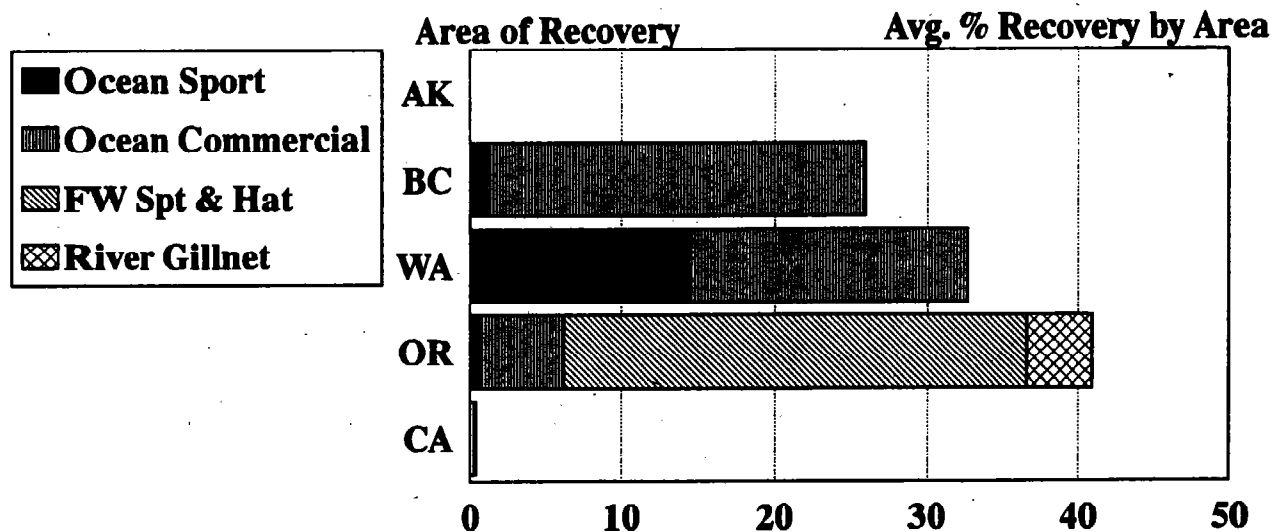
Tule 1986 to 1988 brood fall chinook survived at a rate of 0.13%. They 'were caught primarily in the British Columbia, Washington and northern Oregon ocean commercial and Oregon freshwater fisheries (Figure 1).

Rogue fall chinook-were originally released at Big Creek as an experiment beginning with the 1982 brood. Good survival and contribution rates to Oregon have caused this program to be expanded beyond the pilot production level. The 1993 return of 1,163 Rogue fall chinook to Big Creek provided an estimated 1,358,181 eggs. Preliminary returns during 1994 project an , estimated egg take of over 2.9 million eggs. Eggs in excess to the needs of maintaining the broodstock at Big Creek Hatchery will be reared for acclimation in the Young's Bay net pens (operated by the Clatsop Economic Development Commission) and released to enhance the development of a very popular terminal gillnet fishery. Rogue fall chinook from the 1984 to 1988 broods averaged survival at a rate of 2.33%. The largest contribution occurred in the Oregon ocean commercial and river freshwater and gillnet fisheries (Figure 2).

The 1986 to 1990 brood Big Creek coho survived at an average rate of 3.55%. They contributed well to the Oregon ocean sport and commercial fisheries (Figure 3).

# Big Creek Tule Fall Chinook Released in Big Creek

1986 - 1988 Brood Year



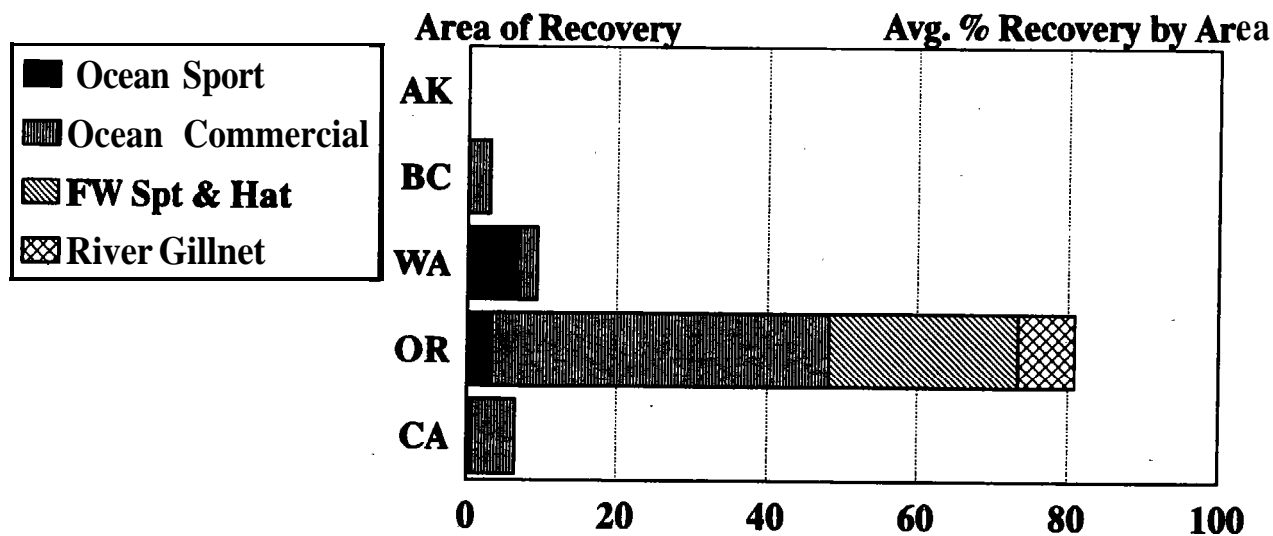
|                  | AK | BC   | WA   | OR   | CA  |
|------------------|----|------|------|------|-----|
| Ocean Sport      |    | 1.1  | 14.4 | 0.8  | 0   |
| Ocean Commercial |    | 24.9 | 18.3 | 5.4  | 0.4 |
| FW Spt & Hat     |    |      |      | 30.4 |     |
| River Gillnet    |    |      |      | 4.3  |     |

Avg. .13 % Survival

Figure 1.

# Rogue Fall Chinook Released in Big Creek

1984 - 1988 Brood Year



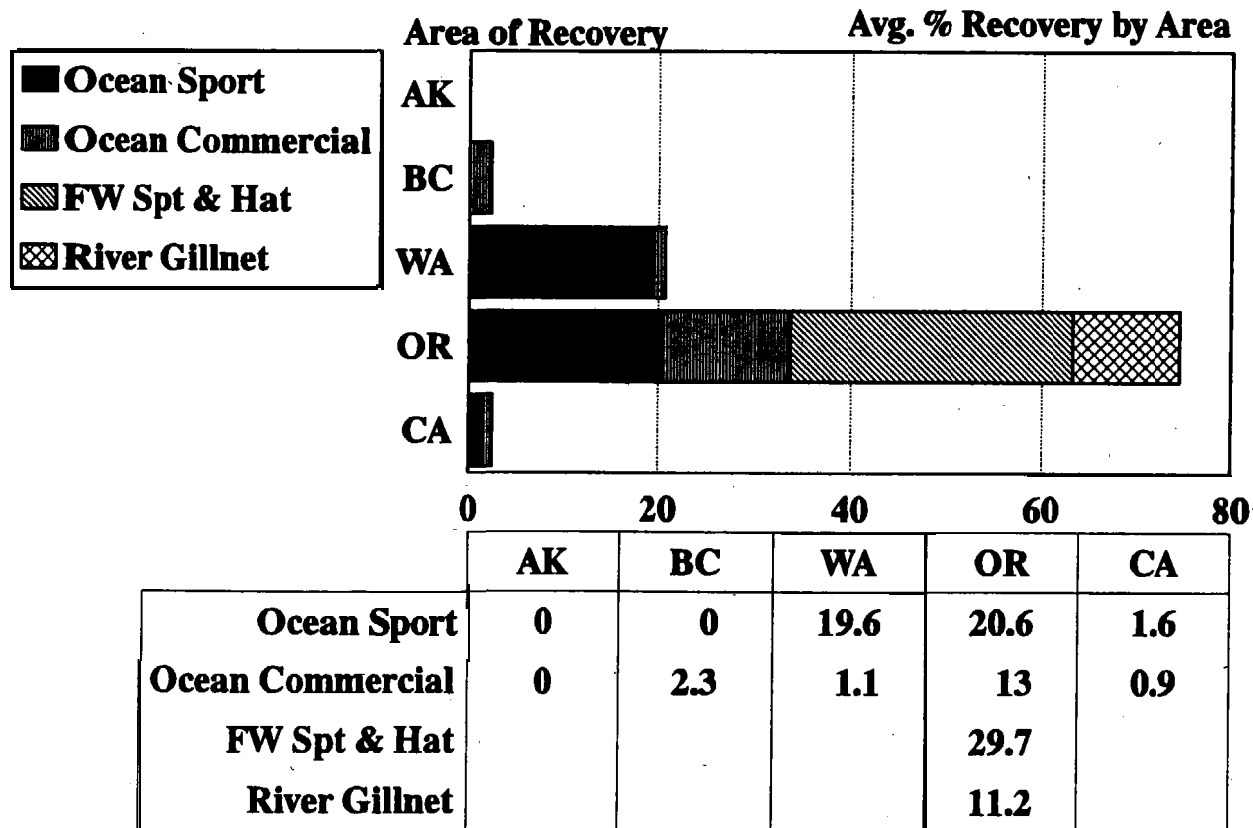
|                  | AK | BC  | WA  | OR   | CA  |
|------------------|----|-----|-----|------|-----|
| Ocean Spurt      |    | 0.2 | 6.8 | 3.5  | 0.8 |
| Ocean Commercial |    | 2.9 | 2.7 | 44.7 | 5.8 |
| FW Spt & Hat     |    |     |     | 25.2 |     |
| River Gillnet    |    |     |     | 7.5  |     |

Avg. 2.33 % Survival

Figure 2.

# Big Creek Coho Released in Big Creek

1986 - 1990 Brood Year



**Avg. 2.55 % Survival**

Figure 3.

Only small experimental groups of chum salmon were previously reared at Big Creek and none of these fish have been coded-wire tagged for evaluation.

Winter steelhead are reared at Big Creek but none have been marked with coded-wire tags for evaluation.

#### Klaskanine Hatchery

Klaskanine Hatchery is located 21 miles southeast of Astoria on Highway 202 on the Klaskanine River. The hatchery originally built in 1913 was expanded and remodeled in 1953. Klaskanine Hatchery presently raises tule fall chinook, coho salmon and winter steelhead trout.

The 1986 to 1988 brood of tule fall chinook released from Klaskanine Hatchery survived at a rate of 0.08 %. They contributed primarily to the British Columbia, Washington, and Oregon ocean commercial and the Columbia River and Youngs Bay gillnet fisheries (Figure 4).

The 1986 to 1990 brood Klaskanine coho produced an average survival at a rate of 2.73 %. They contributed primarily to the Oregon ocean sport, commercial and the Columbia River and Youngs Bay gillnet fisheries (Figure 5).

Winter steelhead are reared at Klaskanine Hatchery but none have been marked with coded-wire tags for evaluation.

#### Clatsop Economic Development Commission (CEDC)

CEDC operates a series of freshwater ponds and saltwater net pens in Youngs Bay near Astoria. CEDC releases coho and chinook salmon.

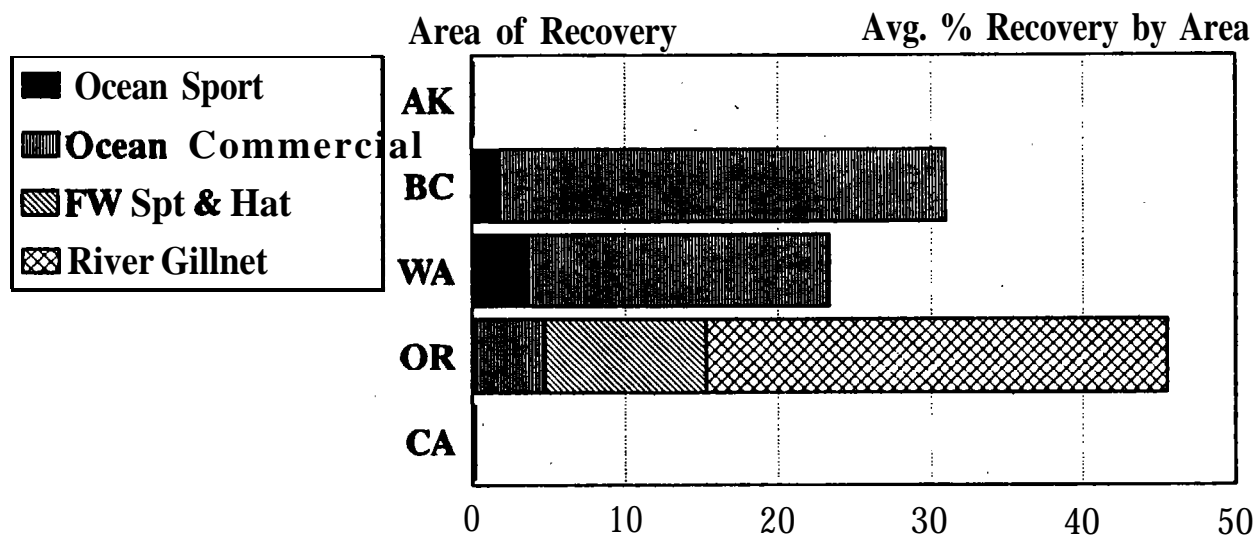
The 1984 to 1987 broods tule fall chinook released in the South Fork Klaskanine River averaged a survival rate of 0.48 %. They were caught primarily in the British Columbia ocean commercial and the lower Columbia River and Youngs Bay gillnet fisheries (Figure 6).

The 1984 to 1987 brood Rogue fall chinook reared by CEDC in net pens and released in the Klaskanine River averaged a survival rate of 2.93 %. They were caught primarily in the Oregon commercial troll and Youngs Bay gillnet fisheries (Figure 7).

The 1986 Big Creek coho stock reared by CEDC and released in Tucker Creek survived at a rate of 3.12 %. They were harvested primarily in the Oregon ocean commercial and sport fisheries and the lower Columbia and Youngs Bay gillnet fisheries (Figure 8).

# **Klaskanine Hat. (Big Creek Stk) Tule Fall Chinook Released in Klaskanine R**

1986 - 1988 Brood Year



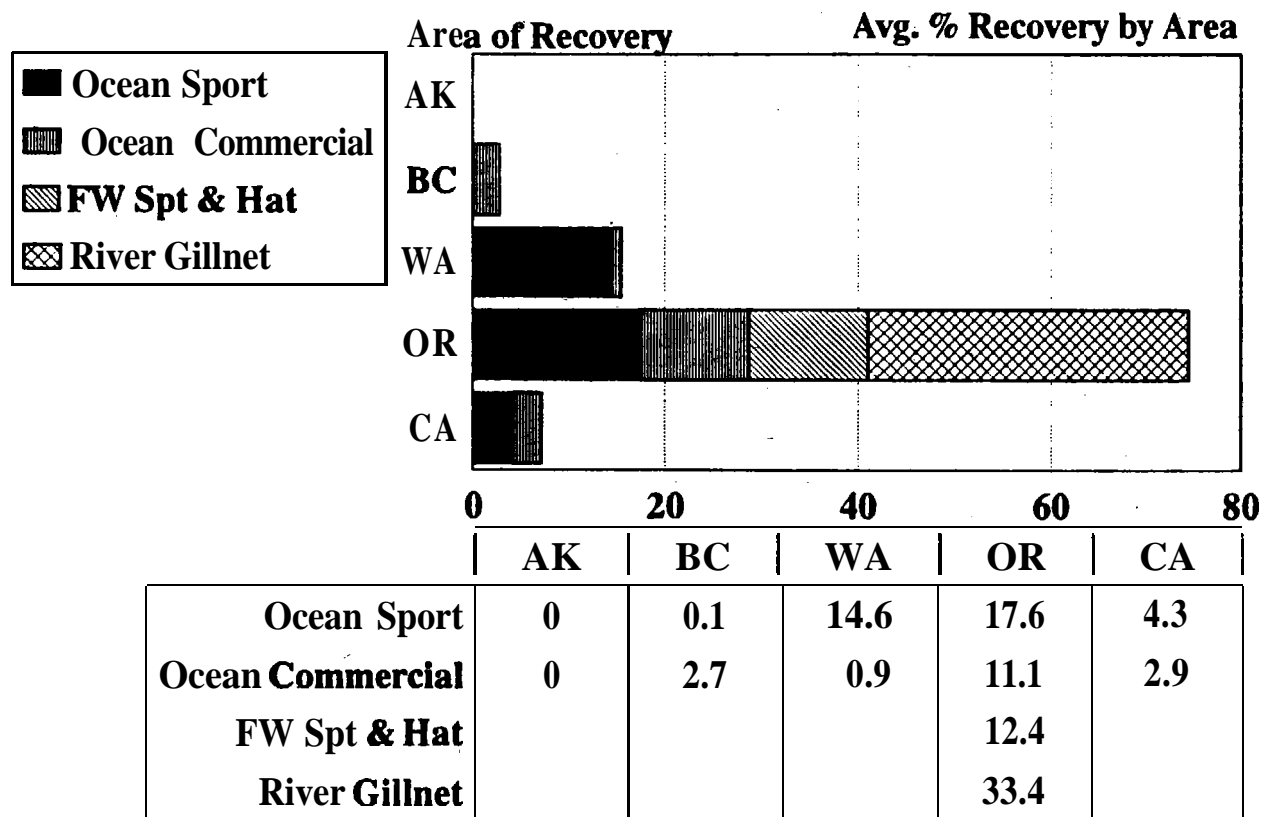
|                  | AK  | BC   | WA   | OR   | CA  |
|------------------|-----|------|------|------|-----|
| Ocean Sport      |     | 1.8  | 3.7  | 0.1  | 0.1 |
| Ocean Commercial | 0.1 | 29.2 | 19.7 | 4.6  | 0.1 |
| FW Spt & Hat     |     |      |      | 10.6 |     |
| River Gillnet    |     |      |      | 30.2 |     |

Avg. 0.08 % Survival

Figure 4.

# **Klaskanine Coho Released in Klaskanine R**

1986 - 1990 Brood Year

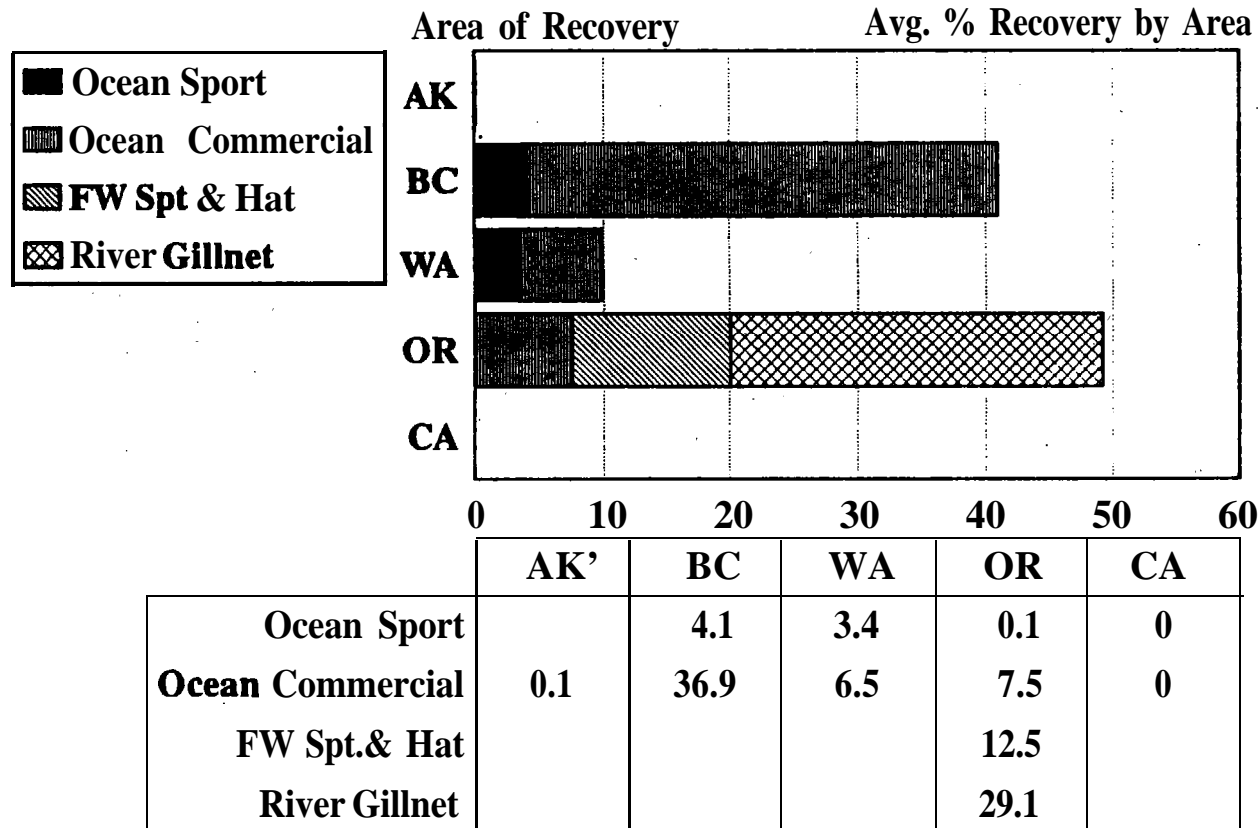


Avg. 2.73 % Survival

Figure 5.

# S.F. Klaskanine Pond Tule Fall Chinook Released in S. F. Klaskanine R.

1984 - 1987 Brood Year



Avg. 0.48 % Survival

Figure 6.

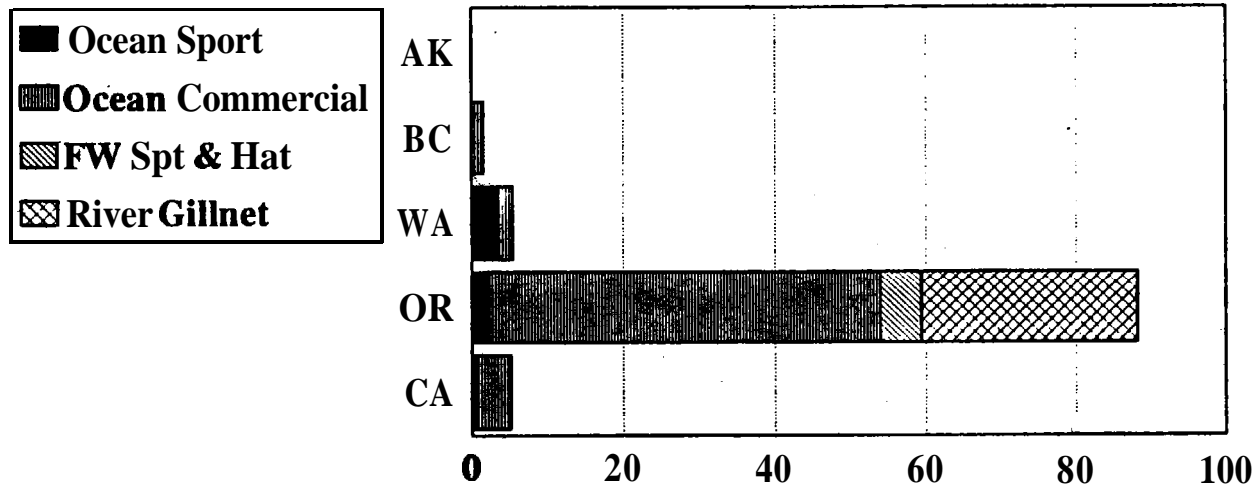


# Rogue Fall Chinook (S.F. Klaskanine Hat) Released in Klaskanine R

1984 - 1987 Brood Year

Area of Recovery

Avg. % Recovery by Area



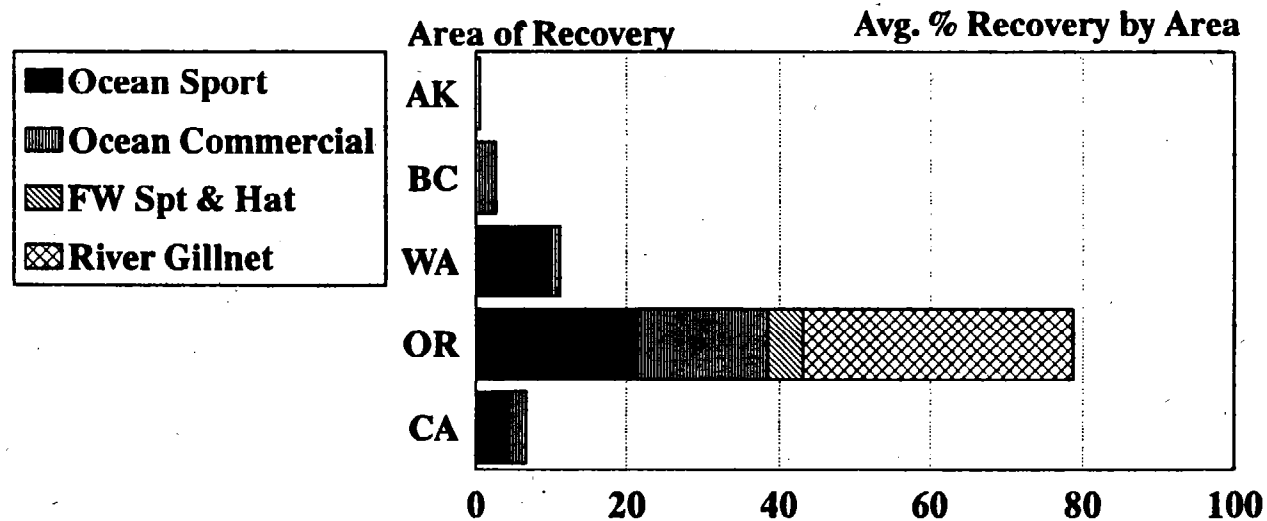
|                  | AK | BC  | WA  | OR   | CA  |
|------------------|----|-----|-----|------|-----|
| Ocean Sport      |    |     | 3.6 | 2.3  | 0.8 |
| Ocean Commercial |    | 1.6 | 1.8 | 51.8 | 4.3 |
| FW Spt & Hat     |    |     |     | 5.4  |     |
| River Gillnet    |    |     |     | 28.6 |     |

Avg. 2.93 % Survival

Figure 7.

# SF Klaskanine Pond (Big Creek Stock) Coho Released in Tucker Creek

1986 Brood Year



|                  | AK  | BC  | WA   | OR   | CA  |
|------------------|-----|-----|------|------|-----|
| Ocean Sport      | 0   | 0   | 10.1 | 21.5 | 4.5 |
| Ocean Commercial | 0.6 | 2.7 | 1.1  | 17   | 2.2 |
| FW Spt & Hat     |     |     |      | 4.7  |     |
| River Gillnet    |     |     |      | 35.6 |     |

Avg. 3.12 % Survival

Figure 8.

The 1987 brood Sandy River coho stock acclimated in the CEDC freshwater ponds and released in Youngs River survived at an average rate of 2.97 % (Figure 9).

The 1987 to 1990 brood South Fork Klaskanine coho released in Klaskanine River South Fork survived at an average rate of 4.11 % (Figure 10).

The 1990 brood Klaskanine coho stock acclimated in the CEDC salt water net pens and released in the South Fork Klaskanine River (Youngs Bay) survived at a rate of 3.48 % (Figure 11).

The 1990 brood Sandy coho stock acclimated in the Youngs Bay saltwater net pens and released in the South Fork Klaskanine River (Youngs Bay) survived at a rate of 0.03 % (Figure 12).

The 1990 brood Big Creek coho stock acclimated in the Youngs Bay saltwater net pens and released in the South Fork Klaskanine River (Youngs Bay) survived at a rate of 1.13 % (Figure 13).

The 1990 brood Kalama coho stock acclimated in the Youngs Bay saltwater net pens and released in the South Fork Klaskanine River (Youngs Bay) survived at a rate of 0.13 % (Figure 14) This is a north migrating stock and contributed more to British Columbia and Washington and less to California than the 1990 brood south migrating stocks (Klaskanine, Sandy and Big Creek).

The 1988 brood Willamette stock spring chinook reared in the south Fork Klaskanine Hatchery and released in the South Fork Klaskanine River survived at a rate of >0.01 % (Figure 15).

The 1988 brood Willaamette stock spring chinook reared in the south Fork Klaskanine Hatchery and released in the Youngs River survived at a rate of 0.43 (Figure 16).

#### Gnat Creek Hatchery

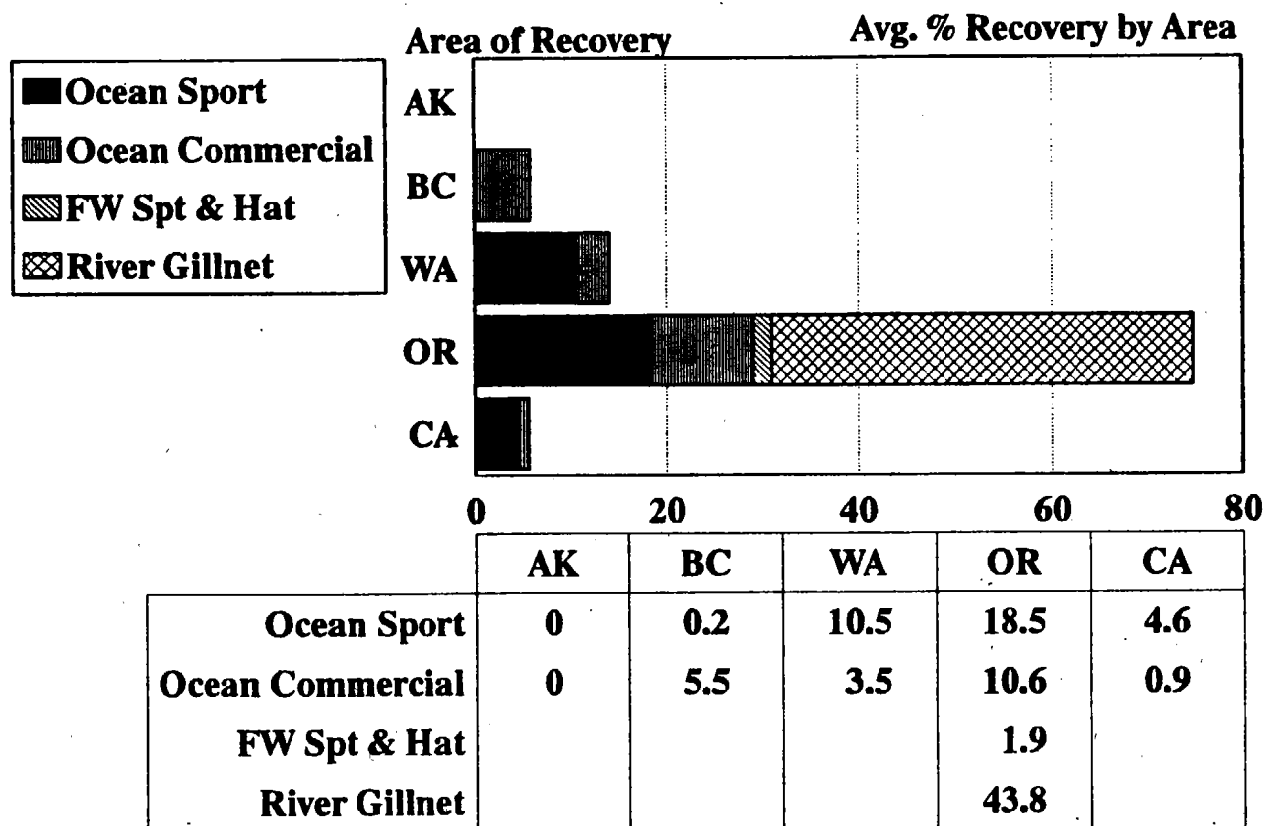
Gnat Creek Hatchery is located east of Knappa off Highway 30 on Gnat Creek a tributary to the Lower Columbia River. Gnat Creek Hatchery releases summer and winter steelhead and cutthroat trout. None of these groups of fish have been coded-wire tagged for evaluation.

#### Eagle Creek National Fish Hatchery

Eagle Creek National Fish Hatchery is located on Eagle Creek a tributary of the Clackamas River southeast of Portland. Eagle Creek Hatchery presently rears and releases coho salmon in Eagle Creek. Additional coho are reared for ODFW and are transported to the CEDC net pens for acclimation in Youngs Bay near Astoria.

# **SF Klaskanine Pond (Sandy R. Stock) Coho Released in Youngs River**

**1987 Brood Year**

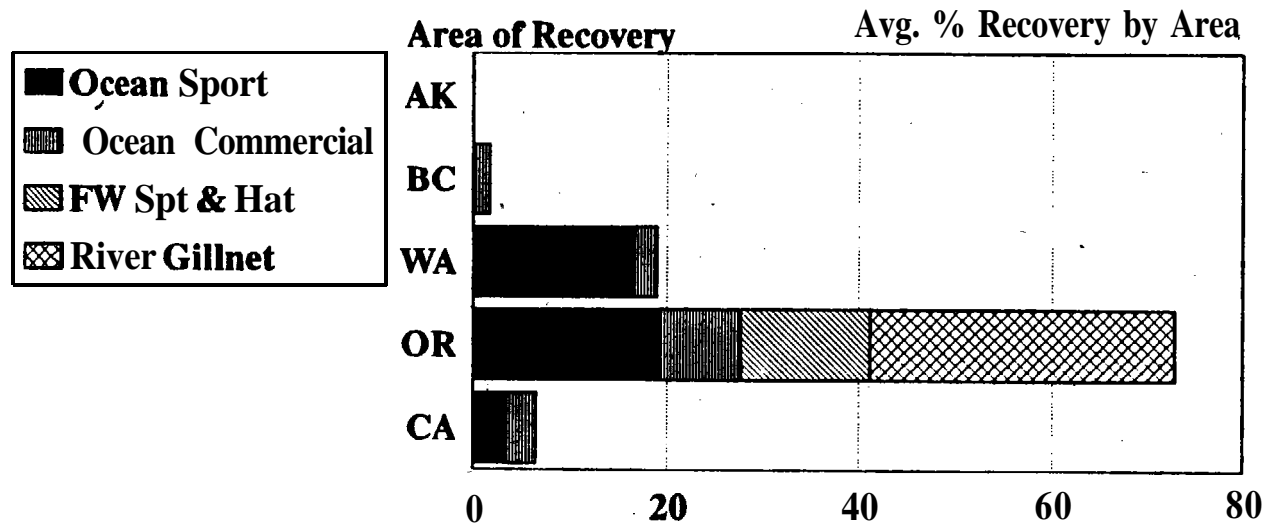


**Avg. 2.97 % Survival**

Figure 9.

# SF Klaskanine Pond Coho Released in Klaskanine R . S. Fork

1987 to 1990 Brood Year



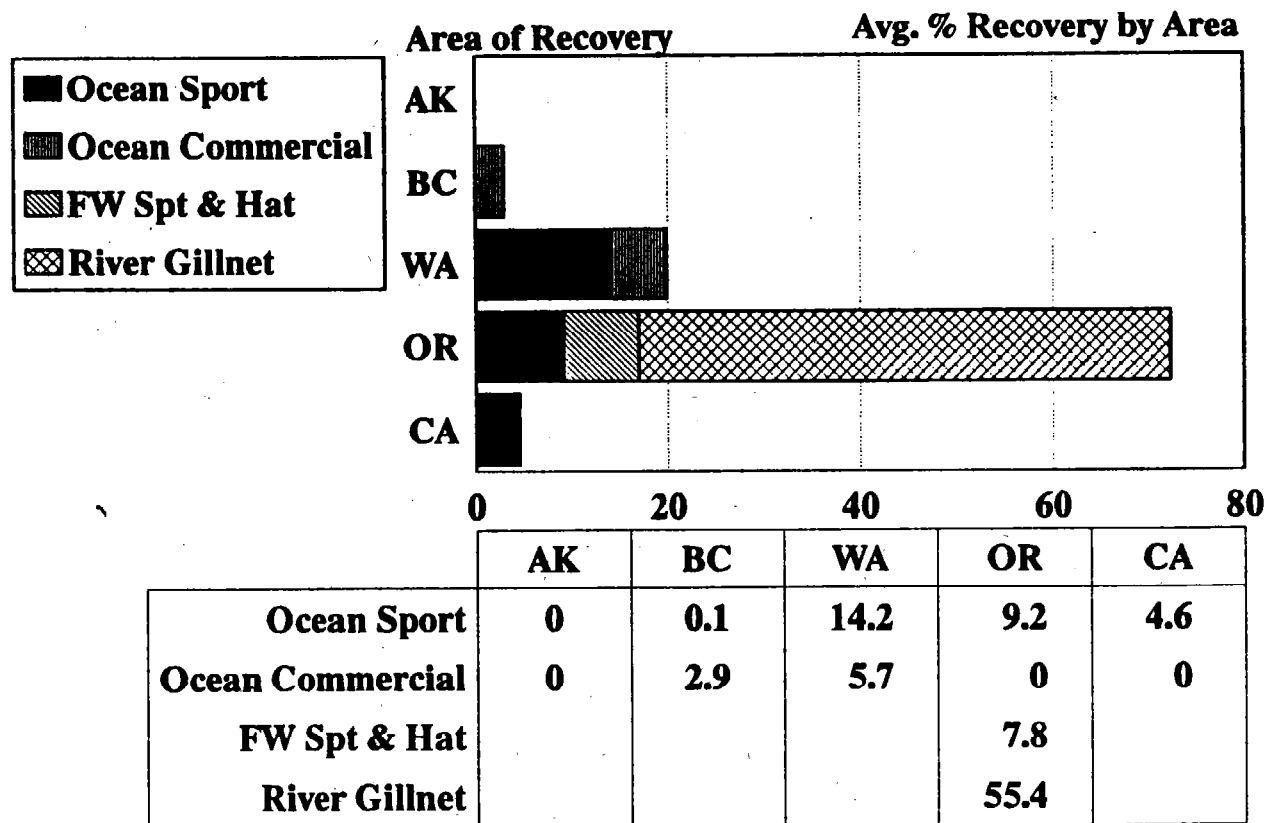
|                  | AK | BC  | WA   | OR   | CA  |
|------------------|----|-----|------|------|-----|
| Ocean Sport      | 0  | 0.2 | 16.7 | 19.4 | 3.5 |
| Ocean Commercial | 0  | 1.5 | 23   | 8.3  | 3   |
| FW Spt & Hat     |    |     |      | 13.5 |     |
| River Gillnet    |    |     |      | 31.7 |     |

Avg. 4.11% Survival

Figure 10.

# SF Klaskanine Pond (Klaskanine Stock) Coho Released in Youngs Bay

1990 Brood Year

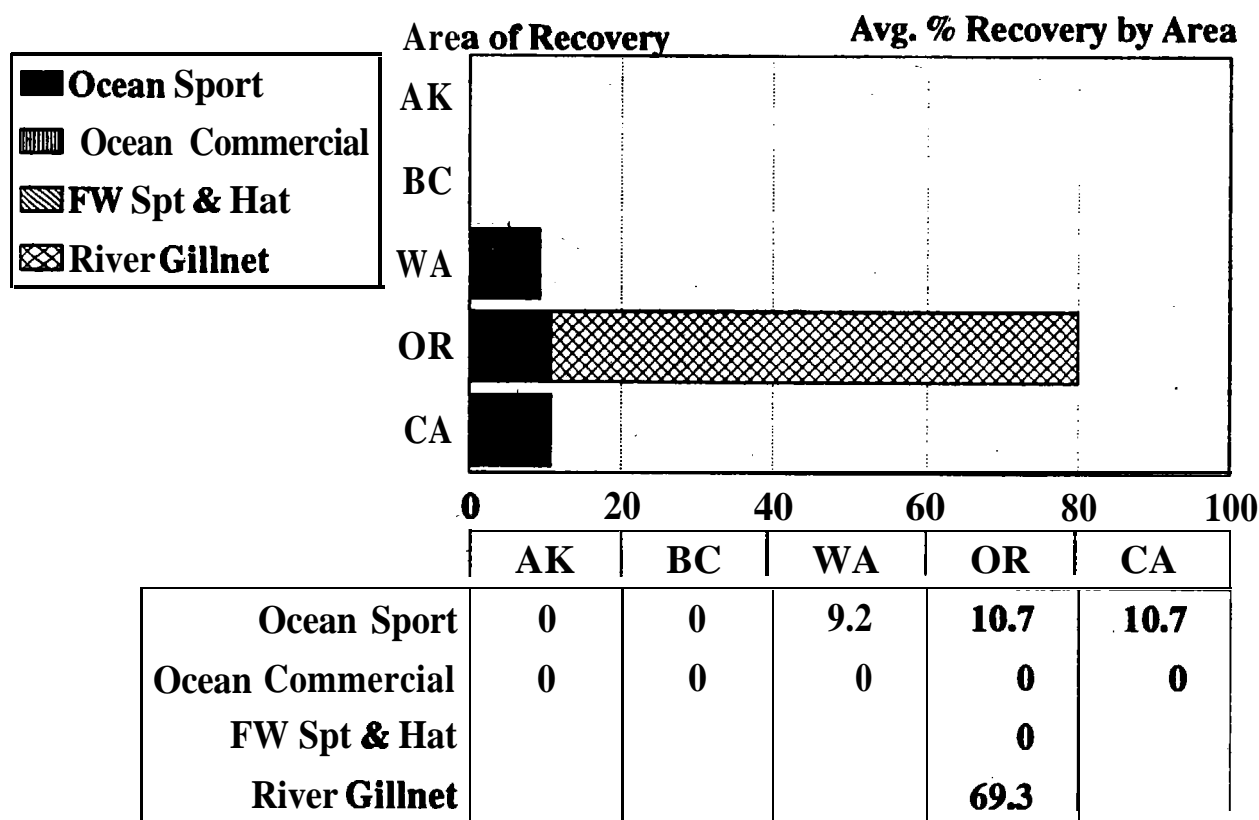


Avg. 3.48 % Survival

Figure 11.

# SF Klaskanine Pond (Sandy R. Stock) Coho Released in Youngs Bay

1990 Brood Year

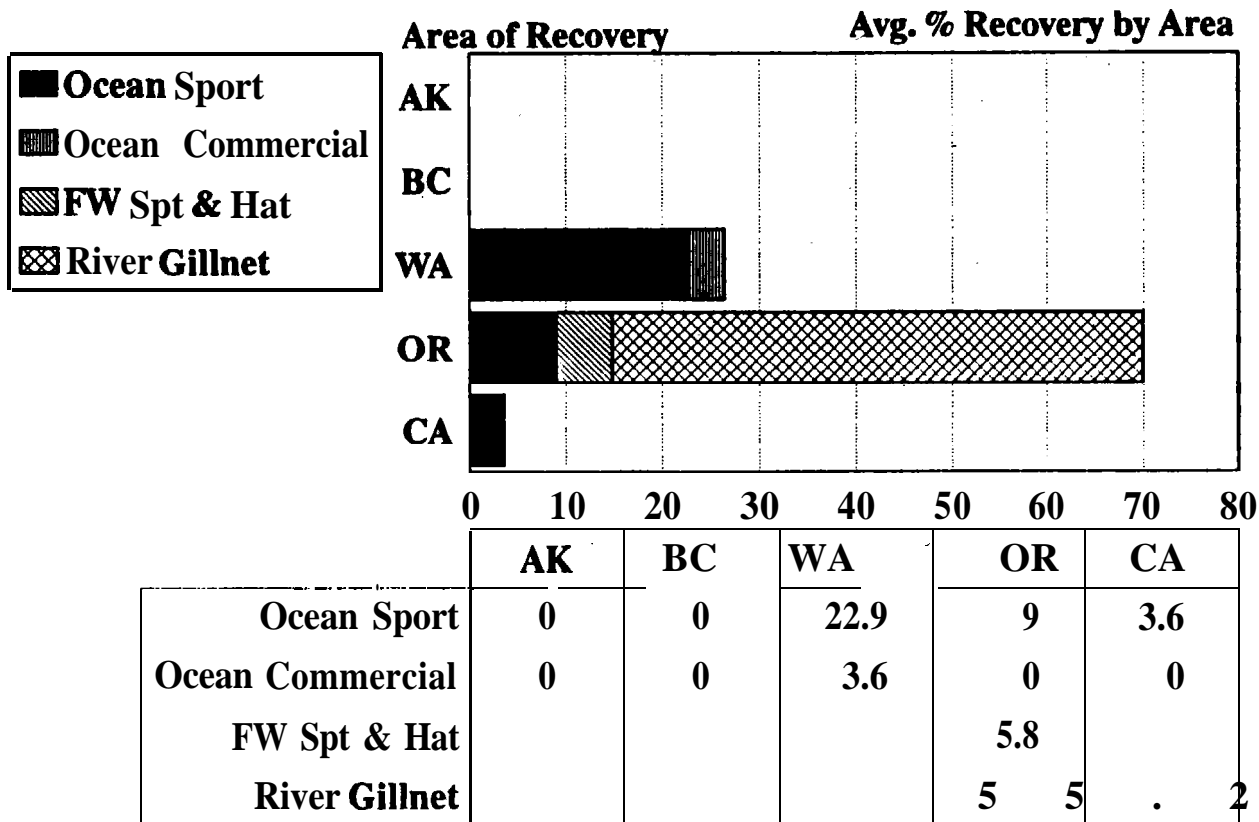


Avg. 0.03 % Survival

Figure 12.

# SF Klaskanine Pond (Big Creek Stock) Coho Released in Youngs Bay

1990 Brood Year



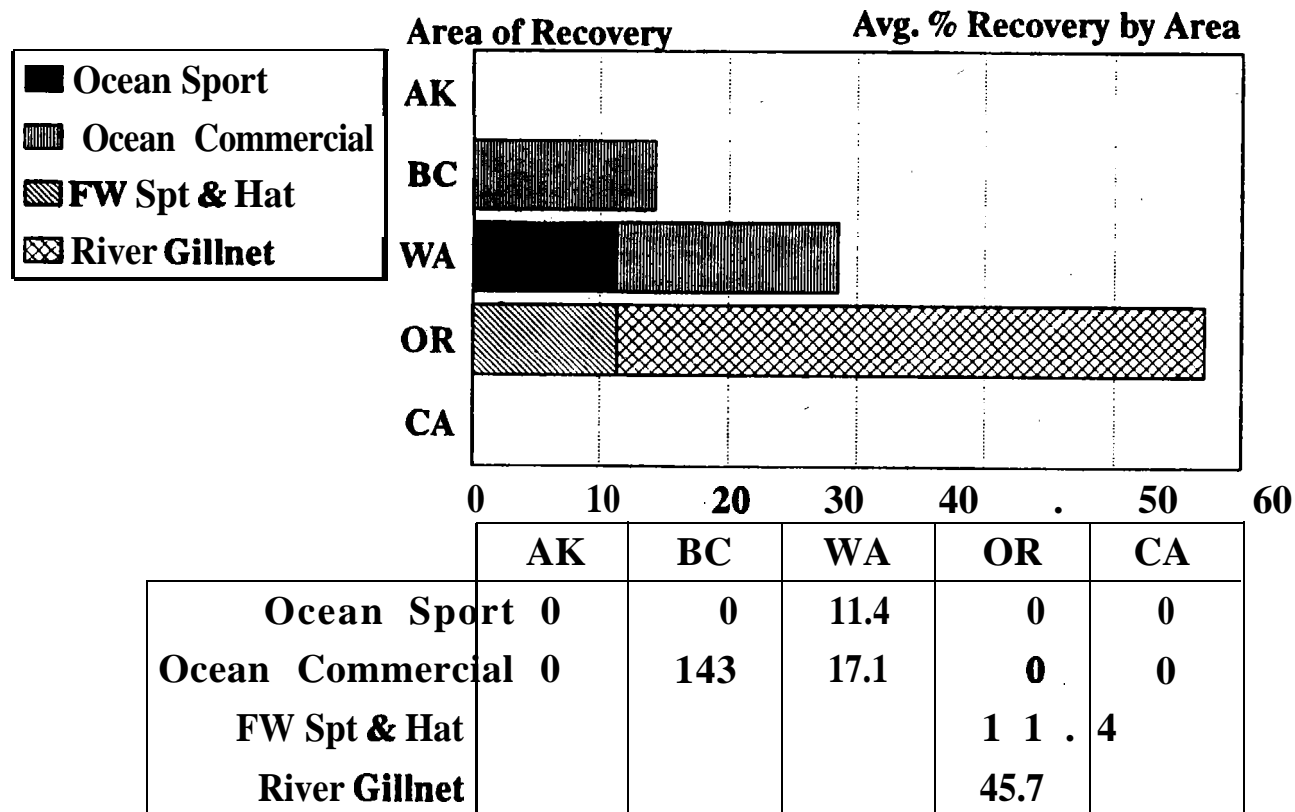
Avg. 1.13 % Survival

Figure 13.



# SF Klaskanine Pond (Kalama R. Stock) Coho Released in Youngs Bay

1990 Brood Year

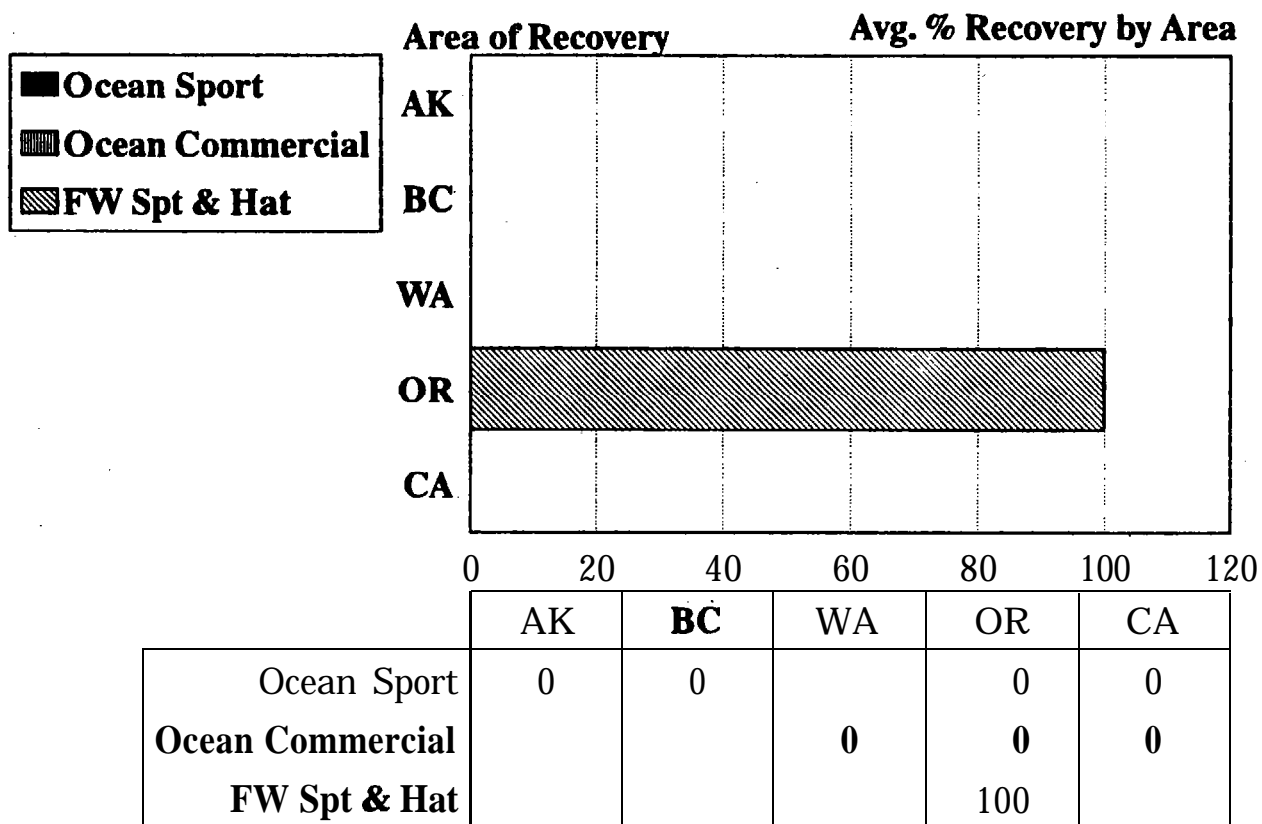


Avg. 0.13 % Survival

Figure 14.

# M. Willamette Spring Chinook [S. F. Klaskanine Hat] Released in Klaskanine R. South Fork

1988 Brood Year

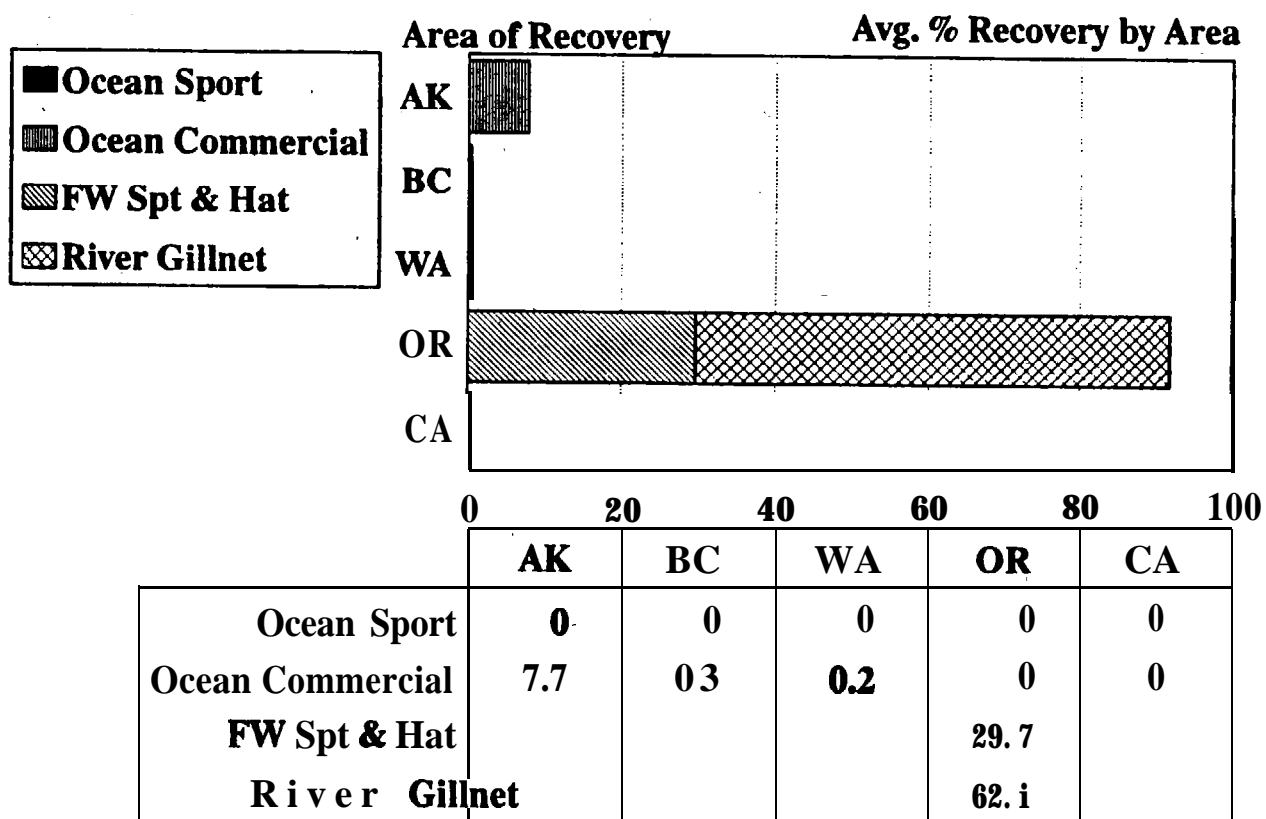


Avg. > 0.01 % Survival

Figure 15.

# M. Willamette Spring Chinook [S. F. Klaskanine Hat] Released in Youngs River

1988 Brood Year



Avg. 0.43 % Survival

Figure 16.

The 1987 brood Eagle Creek (Sandy stock) coho released in the Klaskanine River survived at a rate of 1.56 % (Figure 17).

The 1988 to 1989 brood Eagle Creek (Clackamas stock) coho released in the Youngs River survived at a rate of 4.69 % (Figure 18).

#### Clackamas Hatchery

Clackamas Hatchery is located on the Clackamas River 4 miles west of Estacada near McIver Park. Clackamas Hatchery rears and released spring chinook salmon, summer and winter steelhead trout.

The 1984 to 1988 brood Clackamas spring chinook released in the Clackamas River survived at an average rate of 0.58 %. They were caught primarily in the Oregon freshwater sport fishery with lesser contributions to the Alaska and British, Columbia ocean commercial and Columbia River gillnet fisheries (Figure 19).

The 1986 to 1987 brood Mid Willamette stock spring chinook released in the Clackamas River survived at an average rate of 1.66 %. They were caught primarily in the Oregon freshwater sport fishery with lesser contributions to the Alaska and British Columbia ocean commercial and Columbia River gillnet fisheries . (Figure 20).

The 1986 to 1987 brood Late Clackamas stock coho released in the Collawash River survived at a rate of 0.73 % (Figure 21).

None of the summer and winter steelhead were marked with coded-wire tags for evaluation.

#### Marion Forks Hatchery

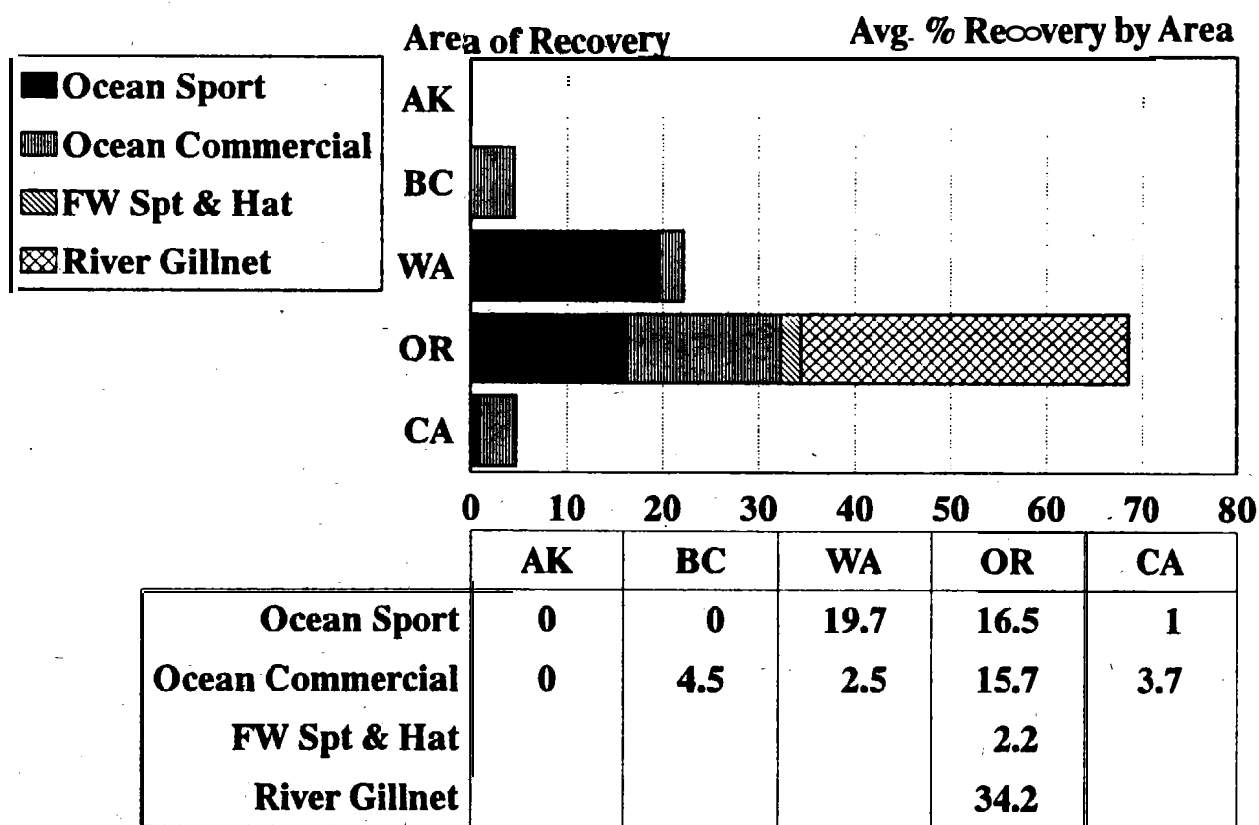
Marion Forks Hatchery is. located on 'the North Santiam River 10 miles east of Idana on Highway 22. Marion Forks Hatchery rears and releases spring chinook salmon, winter steelhead and cutthroat.

The 1984 to 1988 brood North Santiam spring chinook salmon stock released in the Santiam River and North Fork survived at an average rate of 1.35 % and contributed primarily to the Oregon freshwater sport and Columbia River gillnet fisheries and Alaska and British Columbia ocean fisheries (Figure 22).

The 1985 to 1987 brood North Santiam spring chinook salmon released in the Santiam River and South Fork survived at an average rate of 1.27 % and contributed primarily to the Oregon freshwater sport and Columbia River gillnet fisheries and Alaska and British Columbia ocean fisheries (Figure 23).

# Eagle Creek (Sandy R. Stock) Coho Released in Klaskanine R

1987 Brood Year

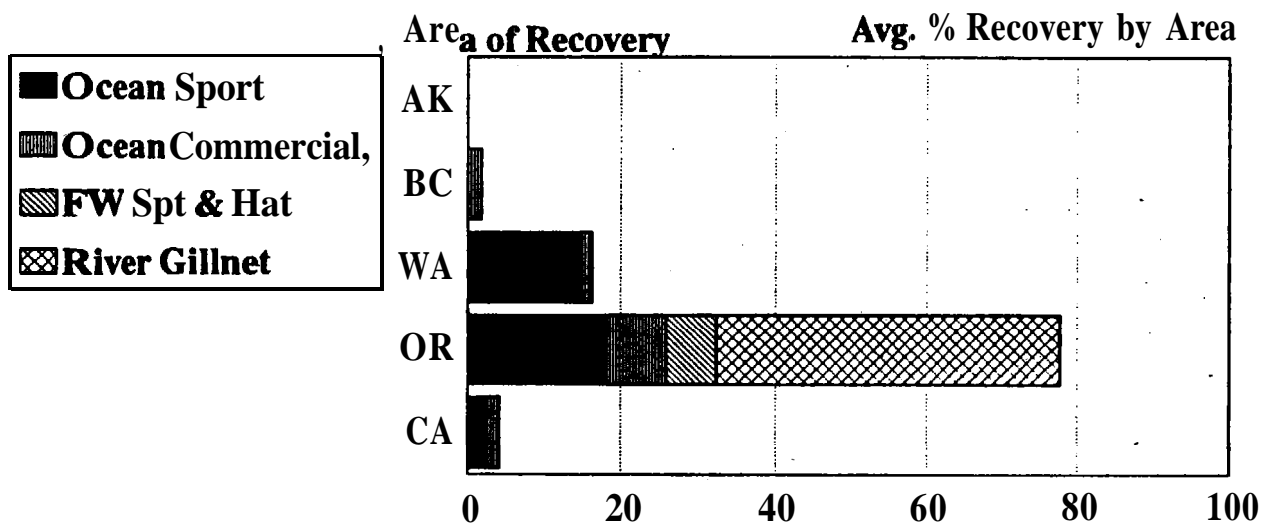


Avg. 1.56 % Survival

Figure 17.

# Eagle Creek (Clackamas R. Stock) Coho Released in Youngs River

1988 -1989 Brood Year



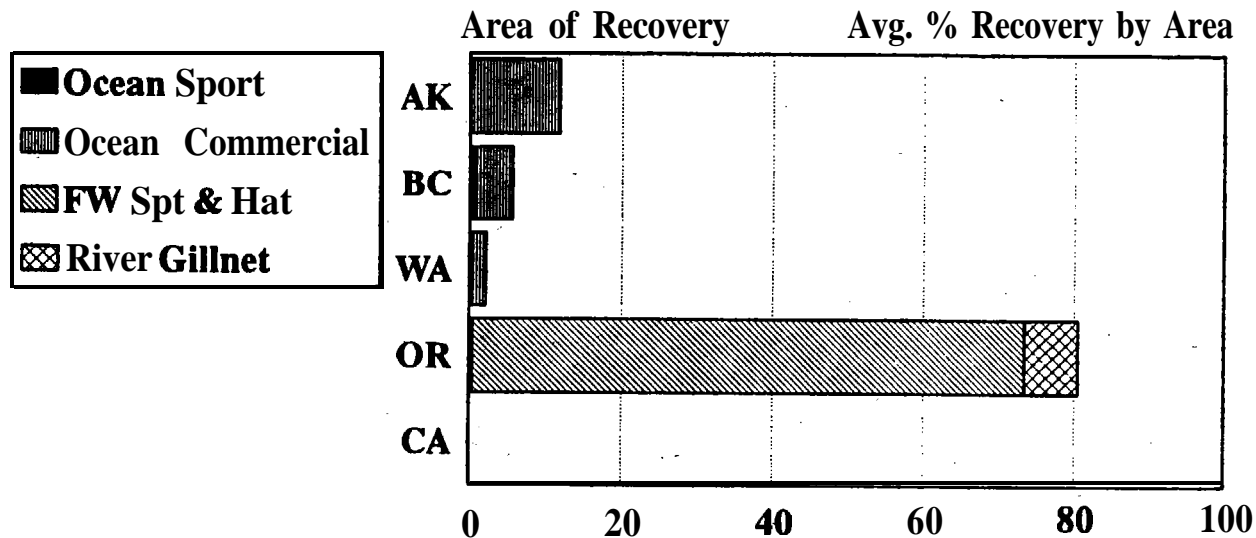
|                  | AK | BC  | WA | OR   | CA  |
|------------------|----|-----|----|------|-----|
| Ocean Sport      | 0  | 0   | 15 | 18.2 | 2.3 |
| Ocean Commercial | 0  | 1.8 | 13 | 7.7  | 2   |
| FW Spt & Hat     |    |     |    | 6.6  |     |
| River Gillnet    |    |     |    | 45.2 |     |

Avg. 4.69 % Survival

Figure 18.

# Clackamas Spring Chinook Released in Clackamas R

1984 - 1987 Brood Year



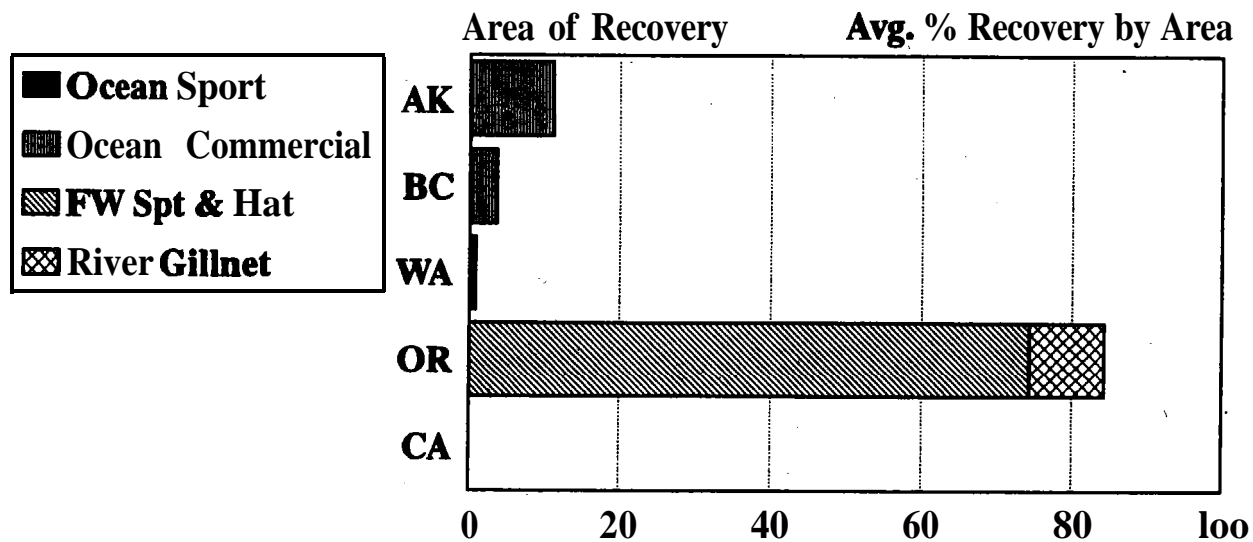
|                   | AK   | BC  | WA  | OR  | CA |
|-------------------|------|-----|-----|-----|----|
| Ocean Sport       | 0.1  | 0.9 | 0.5 | 0.4 |    |
| Ocean Commercial- | 11.7 | 4.7 | 1.7 | 0.1 |    |
| FW Spt & Hat      |      |     |     | 73  |    |
| River Gillnet     |      |     |     | 7   |    |

Avg. 0.58 % Survival

Figure 19.

# Willamette Spring Chinook Released in Clackamas R

1986 - 1987 Brood Year



|                  | AK   | BC  | WA  | OR   | CA |
|------------------|------|-----|-----|------|----|
| Ocean Sport      | 0.3  |     | 0.9 |      |    |
| Ocean Commercial | 10.9 | 3.7 |     |      |    |
| FW Spt & Hat     |      |     |     | 74.4 |    |
| River Gillnet    |      |     |     | 9.9  |    |

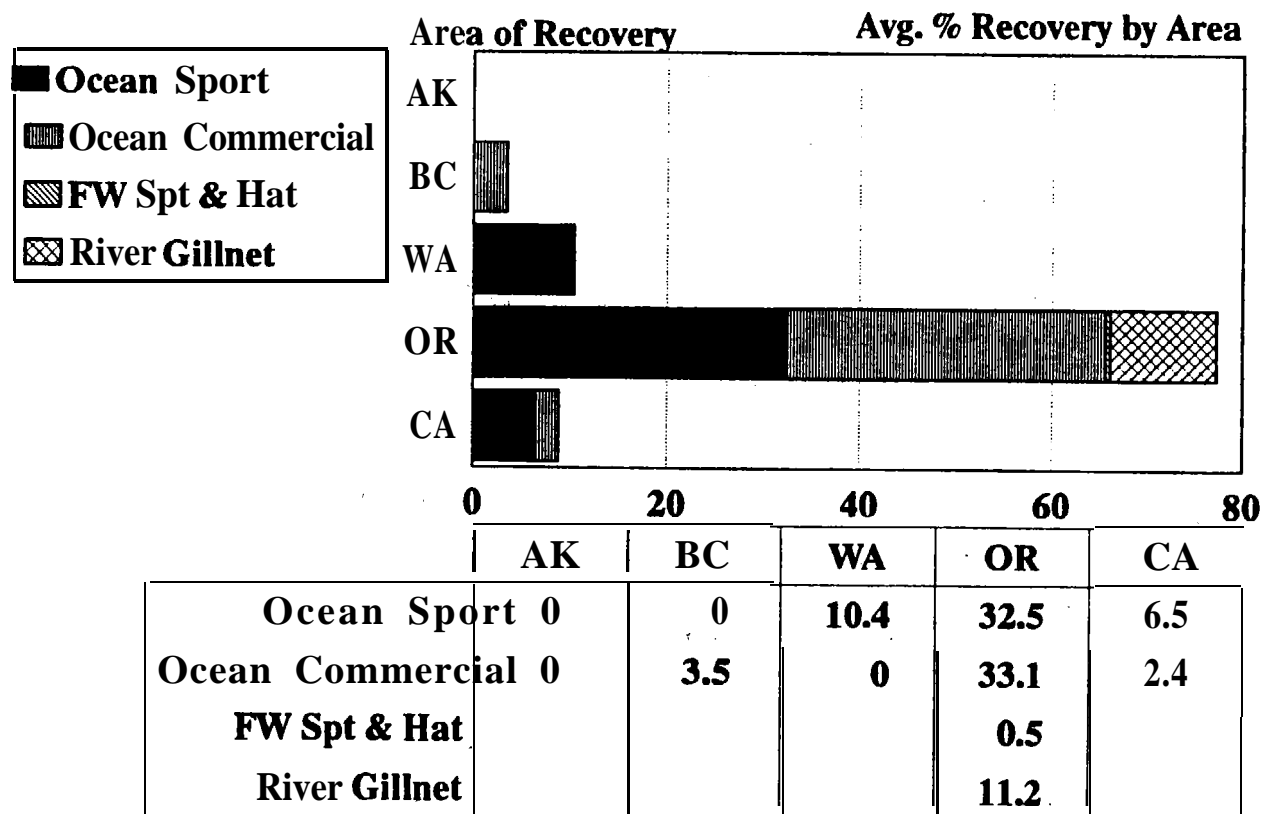
Avg. 1.66 % Survival

Figure 20.



# Clackamas River Late Coho Stock Released in Collawash River

1986 - 1987 Brood Year

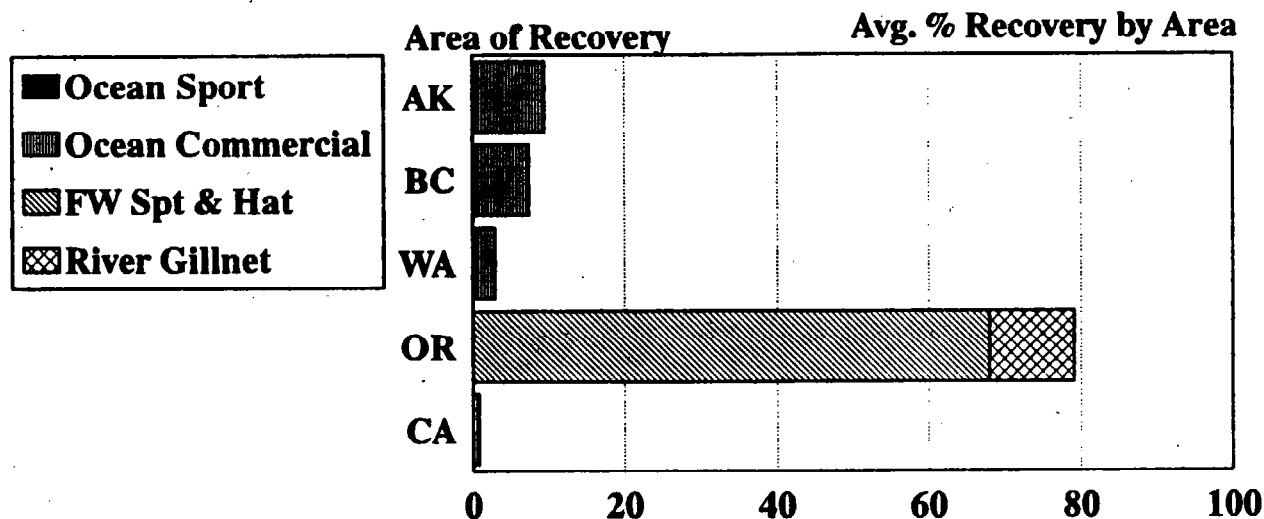


**Avg. 0.73 % Survival**

**Figure 21.**

# Marion Forks (N. Santiam Stock) Spring Chinook Released in Santiam R. & N. Fork

1984 - 1988 Brood Year



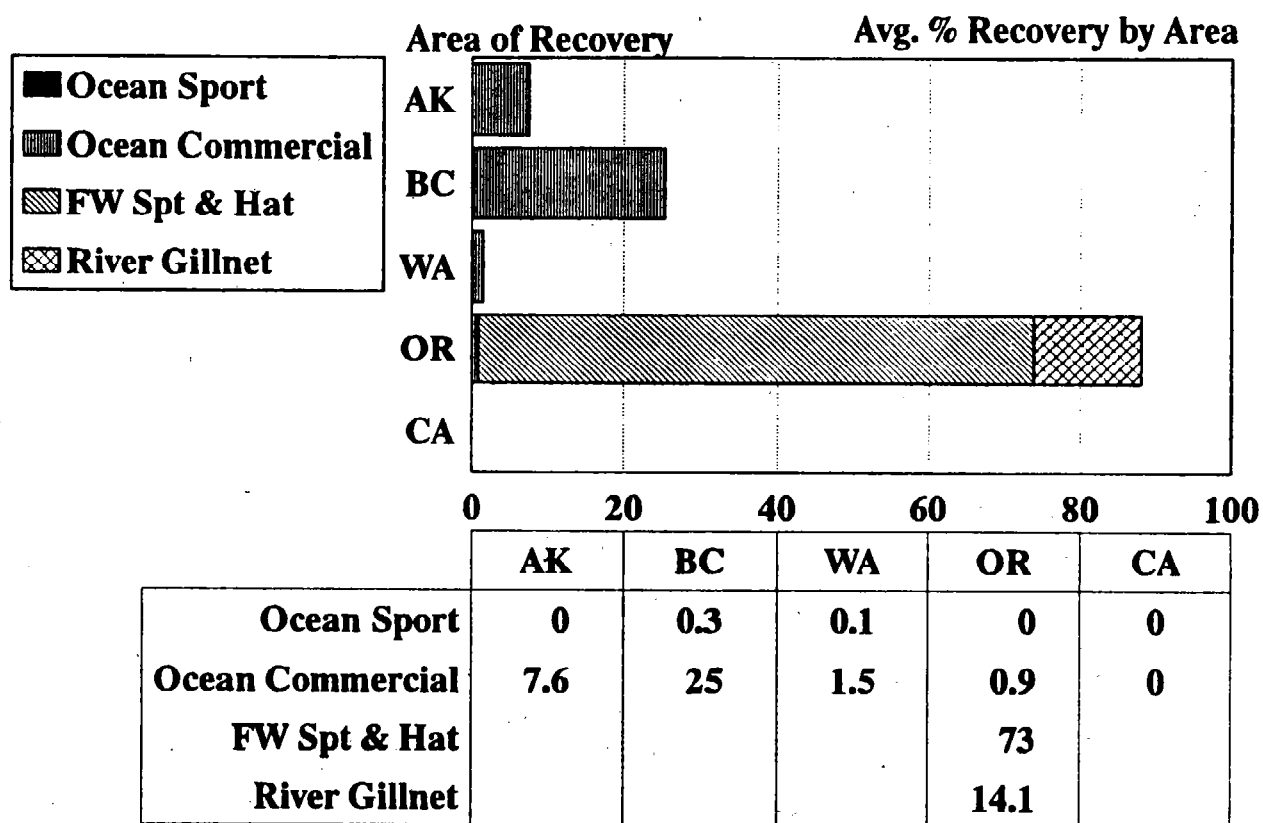
|                  | AK  | BC  | WA  | OR   | CA  |
|------------------|-----|-----|-----|------|-----|
| Ocean Sport      | 0.4 | 0.4 | 0.3 | 0    | 0   |
| Ocean Commercial | 9.2 | 7.1 | 2.7 | 0    | 0.8 |
| FW Spt & Hat     |     |     |     | 67.9 |     |
| River Gillnet    |     |     |     | 11.2 |     |

Avg. 1.35 % Survival

Figure 22.

# Marion Forks (N. Santiam Stock) Spring Chinook Released in Santiam R., S. Fork

1985 - 1987 Brood Year



Avg. 1.27 % Survival

Figure 23.

The 1984 brood year of South Santiam spring chinook salmon released in the Santiam River and North Fork survived at an average rate of 1.10 % and contributed primarily to the Oregon freshwater sport and Columbia River gillnet fisheries and Alaska and British Columbia ocean fisheries (Figure 24).

The 1985 brood winter steelhead were tagged but none were recovered. All other winter steelhead and cutthroat trout released by the Marion Forks Hatchery were not coded-wire tagged for evaluation.

#### South Santiam Hatchery

The South Santiam Hatchery is located below Foster Dam on the South Santiam River near Sweet Home. South Santiam Hatchery rears and releases spring chinook salmon and summer steelhead trout.

The 1984 to 1988 brood years of spring chinook salmon reared at South Santiam Hatchery and released in the South Santiam River survived at a rate of 0.91 % and contributed primarily to the Alaska and British Columbia ocean commercial, Oregon freshwater sport and Columbia River gillnet fisheries (Figure 25).

The 1986 to 1987 brood years of South Santiam spring chinook salmon reared at South Santiam Hatchery and released in the Willamette River survived at a rate of 1.09 % and contributed primarily to the Alaska and British Columbia ocean commercial, Oregon freshwater sport and Columbia River gillnet fisheries (Figure 26).

The winter steelhead trout released- by the South Santiam Hatchery were not coded-wire tagged to permit evaluation.

#### Stayton Rearing Pond

Stayton Pond, a refurbished gravel pit located south of Stayton is operated as a satellite of the South Santiam Hatchery. Tule fall chinook are reared and released from Stayton Pond.

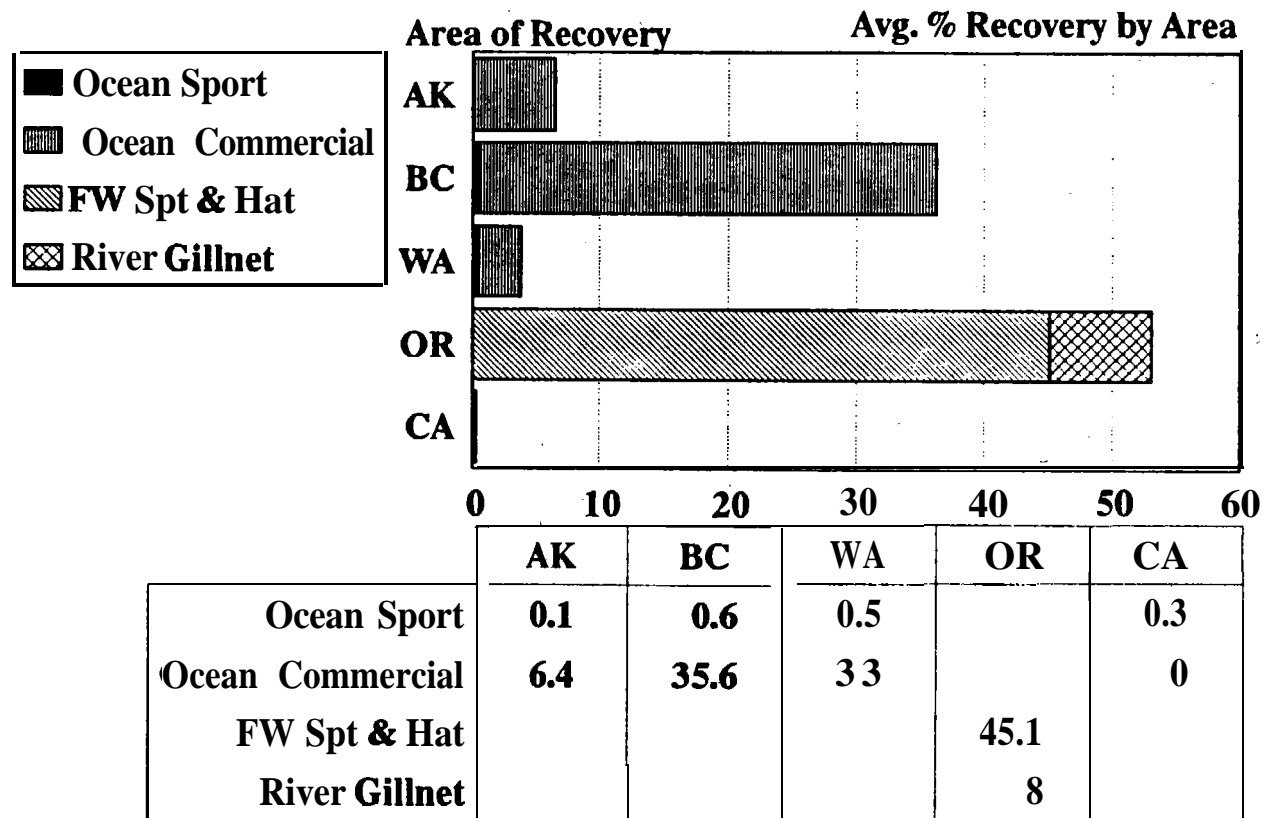
The 1984 to 1988 brood of tule fall chinook released from Stayton pond survived an average rate of 0.80 % and contributed primarily to the British Columbia, Washington and Oregon ocean sport and commercial fisheries and the Columbia River gillnet fishery (Figure 27).

#### Roaring River Hatchery

Roaring River Hatchery rears and releases winter steelhead and rainbow trout. None of these fish have been coded-wire tagged for evaluation.

# Marion Forks (S. Santiam Stk) Spring Chinook Released in Santiam R. & N. Fork

1984 Brood Year

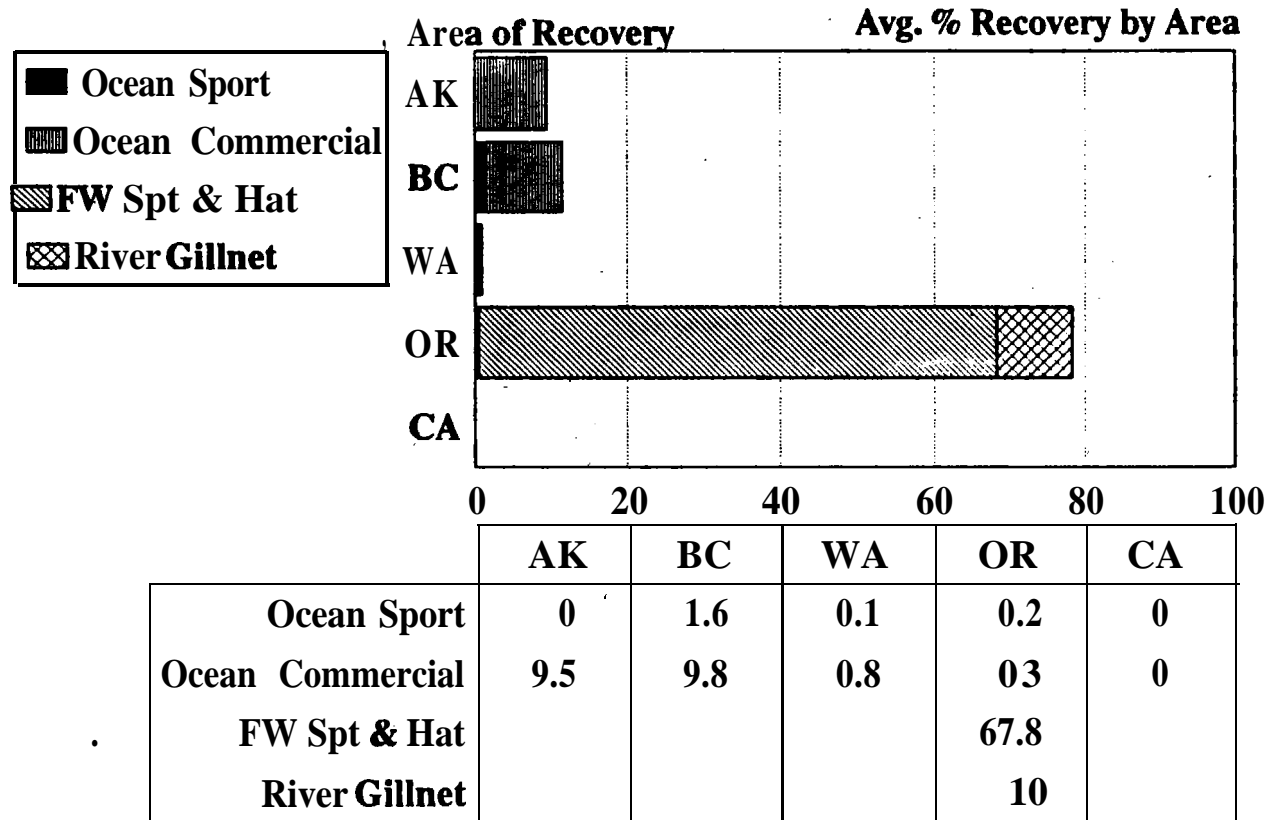


Avg. 1.10 % Survival

Figure 24.

# **S. Santiam (S. Santiam Stock) Spring Chinook Released in Santiam R., S. Fork**

1984 - 1988 Brood Year

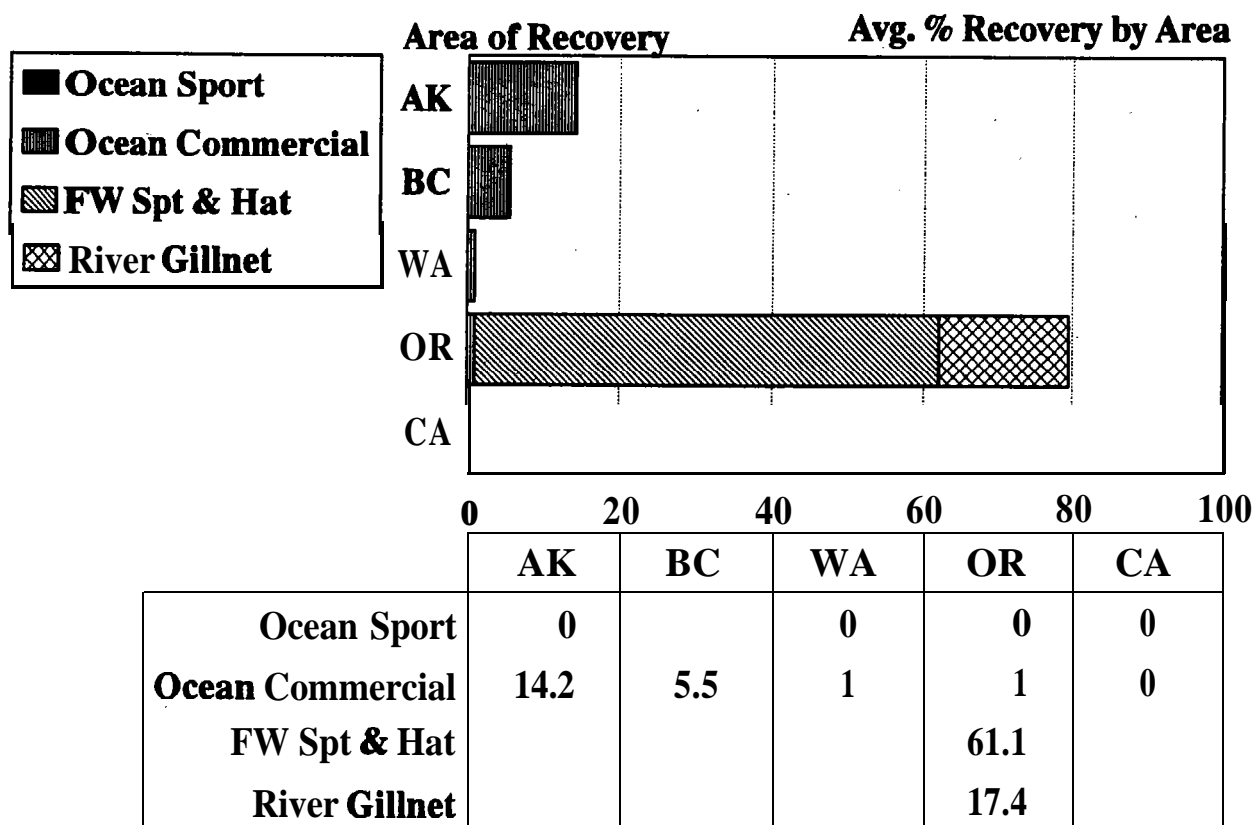


**Avg. 0.91 % Survival**

Figure 25.

# S. Santiam Spring Chinook Released in Willamette River

1986 - 1987 Brood Year



Avg. 1.09 % Survival

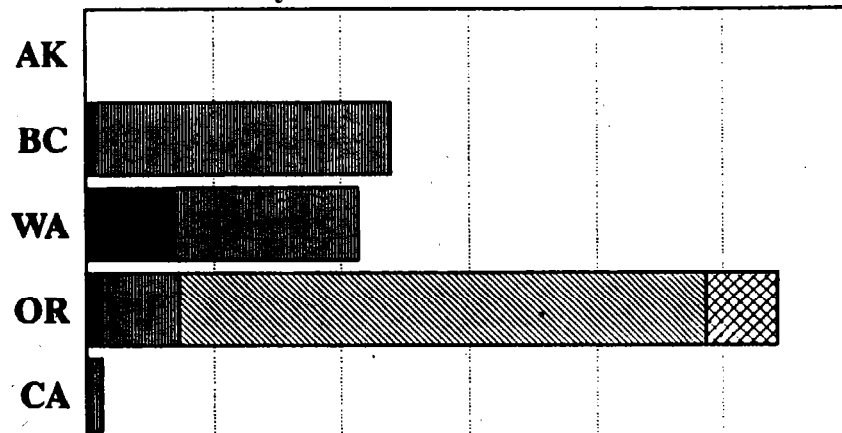
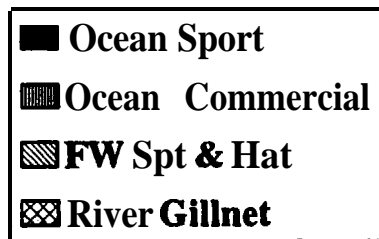
Figure 26.

# Stayton Pond Tule Fall Chinook Released in Willamette R

1984 - 1988 Brood Year

Area of Recovery

Avg. % Recovery by Area



0 10 20 30 40 50 60

|                  | AK | BC   | WA   | OR   | CA  |
|------------------|----|------|------|------|-----|
| Ocean Sport      | ,  | 0.8  | 7    | 1.1  | 0.3 |
| Ocean Commercial |    | 23.1 | 14.4 | 6.2  | 1   |
| FW Spt & Hat     |    |      |      | 41.4 |     |
| River Gillnet    |    |      |      | 5.6  |     |

Avg. 0.80 % Survival

Figure 27.



### **McKenzie Hatchery**

McKenzie Hatchery is located on the McKenzie River 18 miles east of Springfield. McKenzie Hatchery rears and releases spring chinook salmon and summer steelhead trout.

The 1984 to 1988 brood years of spring chinook salmon released in the McKenzie River survived at a rate of 1.08% and contributed primarily to the Alaska and British Columbia ocean commercial, Oregon freshwater sport and Columbia River gillnet fisheries (Figure 28).

None of the summer steelhead released from McKenzie Hatchery have been coded-wire tagged for evaluation.

### **Leaburg Hatchery**

Leaburg Hatchery is located on the McKenzie River off Highway 126, 16 miles east of Springfield. McKenzie Hatchery rears and releases summer steelhead and rainbow trout. None of these fish have been coded-wire **tagged** for evaluation.

### **Willamette Hatchery**

Willamette Hatchery is located on the Willamette River 1 mile east of Oakridge off Highway 58. Willamette Hatchery rears and releases spring chinook salmon, summer and winter steelhead and rainbow trout.

The 1984 to 1988 brood years of spring chinook salmon reared at Willamette Hatchery and released in the middle fork of the Willamette River survived at a rate of 1.21% and contributed primarily to the Alaska and British Columbia ocean commercial, Oregon freshwater sport and Columbia River gillnet fisheries (Figure 29).

### **Sandy Hatchery**

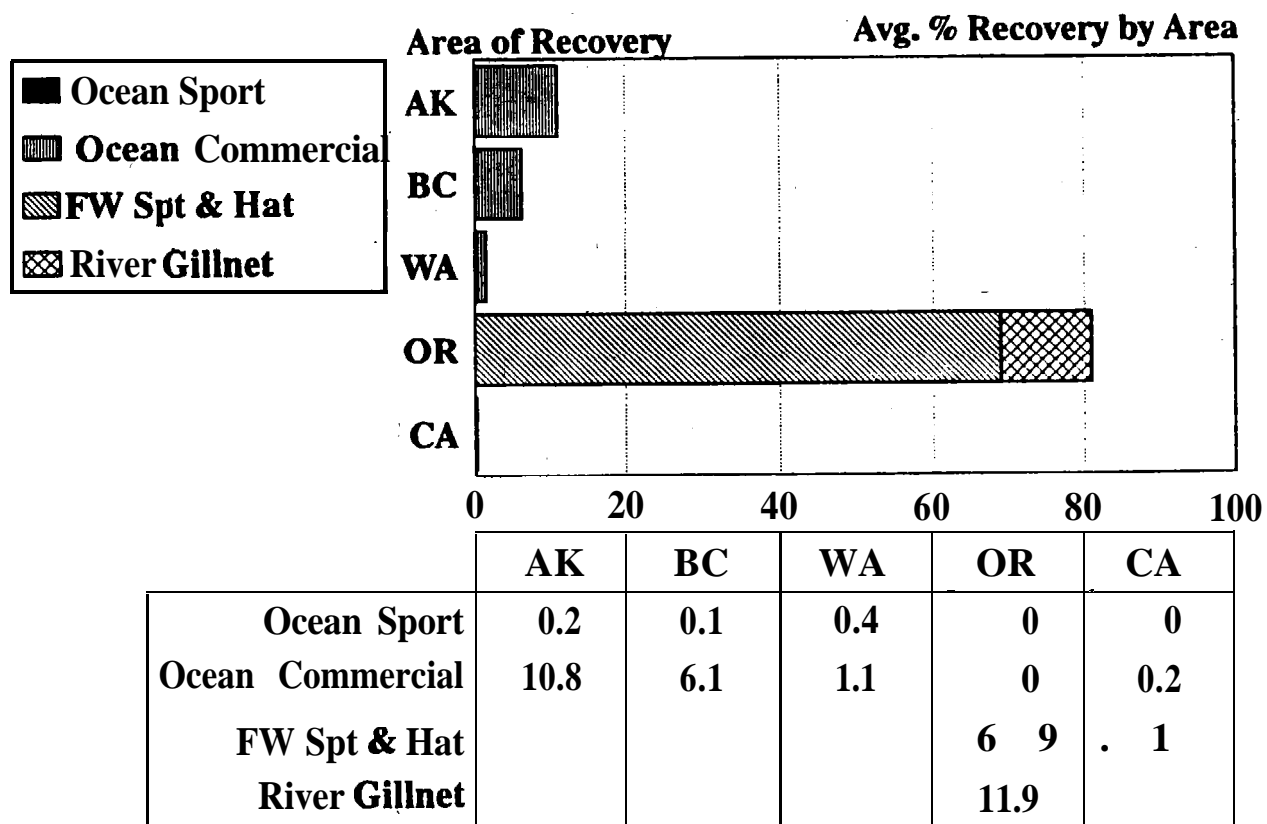
Sandy Hatchery is located on the Sandy River 1 mile northeast of Sandy off Highway 26. Sandy Hatchery rears and releases coho salmon, rainbow and brook trout.

The 1986 to 1990 brood years of coho released in the Sandy River, survived at an average rate of 3.69 % and contributed primarily to the Washington and Oregon ocean sport and commercial fisheries and the Columbia River gillnet fishery (Figure 30).

The 1989 brood year of Sandy stock coho reared at Trojan pond and released in the Columbia River survived at an average rate of

# McKenzie Spring Chinook Released in McKenzie R

1984 - 1988 Brood Year

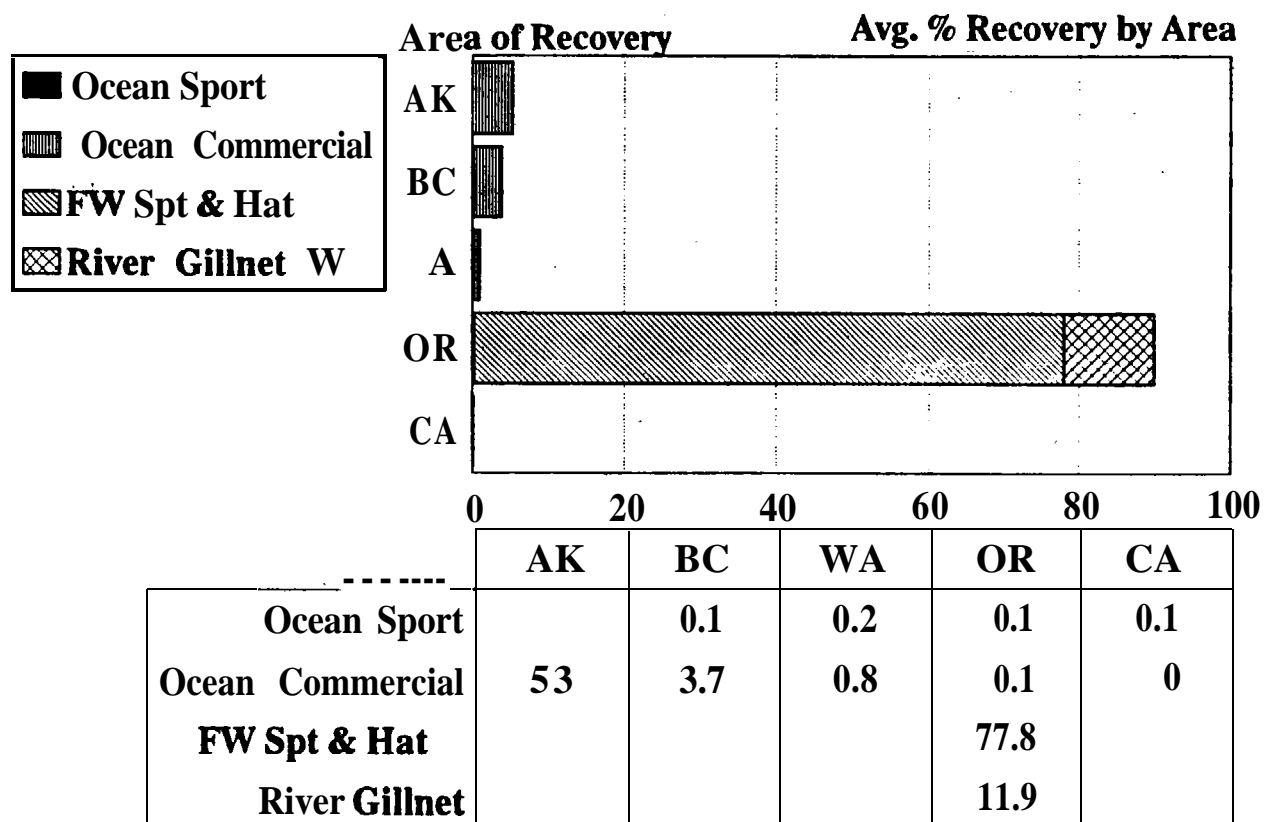


Avg. 1.08 % Survival

Figure 28.

# Willamette Spring Chinook Released in Willamette R., M. Fork

1984 - 1988 Brood Year

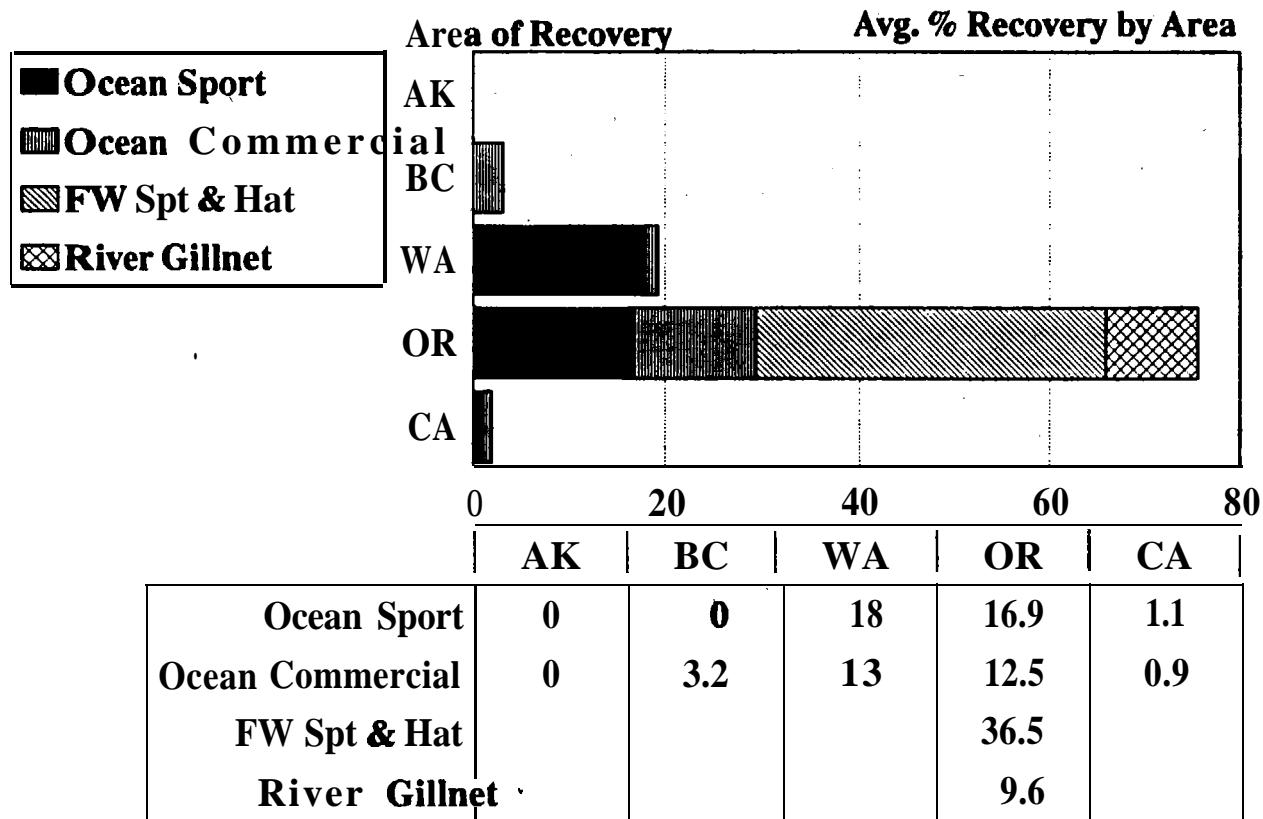


Avg. 1.21% Survival

Figure 29.

# Sandy Coho Released in Sandy River

1986 - 1990 Brood Year



Avg. 3.69 % Survival

Figure 30.

0.2 % and contributed primarily to the Washington and Oregon ocean sport and commercial fisheries and the Columbia River gillnet fishery (Figure 31).

None of the rainbow or brook trout released by Sandy Hatchery were coded-wire tagged for evaluation.

#### Cascade Hatchery

The Cascade Hatchery is located off Highway 84 near Bonneville Dam. Cascade Hatchery rears and releases coho salmon that are presently all trucked and released in the Yakima and Umatilla River systems.

The 1986 to 1990 brood years of coho released in the Umatilla River survived at an average rate of 1.82 % and contributed primarily to the Washington, Oregon and California ocean sport and commercial fisheries and the Columbia River gillnet fishery (Figure 32).

The 1986 to 1990 brood years of coho released in the Yakima River survived at an average rate of 0.94 % and contributed primarily to the Washington, Oregon and California ocean sport and commercial fisheries and the Columbia River gillnet fishery (Figure 33).

#### Bonneville Hatchery

Bonneville Hatchery is located on the Columbia River below Bonneville Dam just off Highway 84. Bonneville Hatchery rears and releases tule and up-river bright fall chinook, spring chinook and coho salmon.

The 1984 to 1988 brood years of tule fall chinook survived at an average rate of 0.79 % and contributed primarily to the British Columbia, Washington and Oregon ocean sport and commercial fisheries and the Columbia River gillnet fishery (Figure 34).

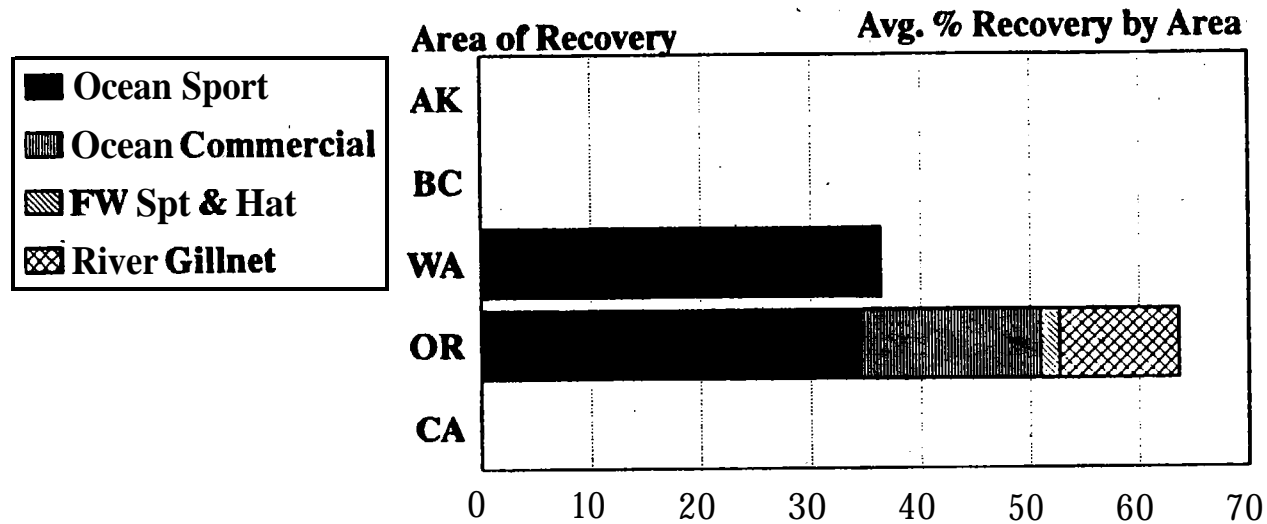
The 1984 to 1988 brood years of up-river bright fall chinook survived at an average rate of 1.56 % and contributed primarily to the Alaska and British Columbia ocean commercial fisheries and the Columbia River gillnet fishery (Figure 35).

The 1984 to 1987 brood years of up-river bright fall chinook released in the Umatilla River survived at an average rate of 1.60 % and contributed primarily to the Alaska and British Columbia ocean commercial fisheries and the Columbia River gillnet fishery (Figure 36).

The 1988 brood year of up-river bright, fall chinook released in the Mid-Columbia River survived at an average rate of 0.16 % and contributed primarily to the British Columbia ocean commercial

# Trojan Pond (Sandy River Stock) Coho Released in Columbia River

1989 Brood Year



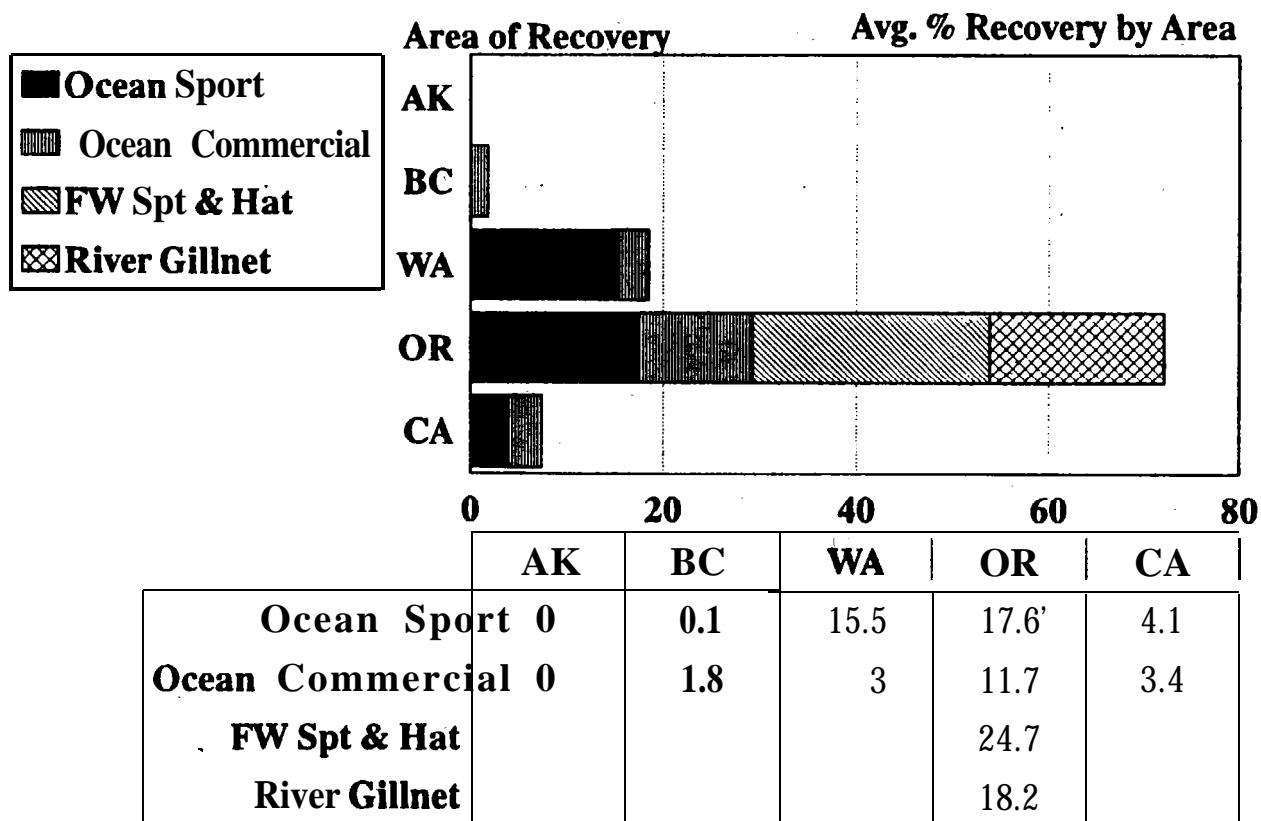
|                  | AK | BC | WA   | OR   | CA |
|------------------|----|----|------|------|----|
| Ocean Sport      | 0  | 0  | 36.4 | 34.6 | 0  |
| Ocean Commercial | 0  | 0  | 0    | 16.4 | 0  |
| FW Spt & Hat     |    |    |      | 1.8  |    |
| River Gillnet    |    |    |      | 10.9 |    |

Avg. 0.2 % Survival

Figure 31.

# Cascade Coho Released in Umatilla R.

1986 - 1990 Brood Year

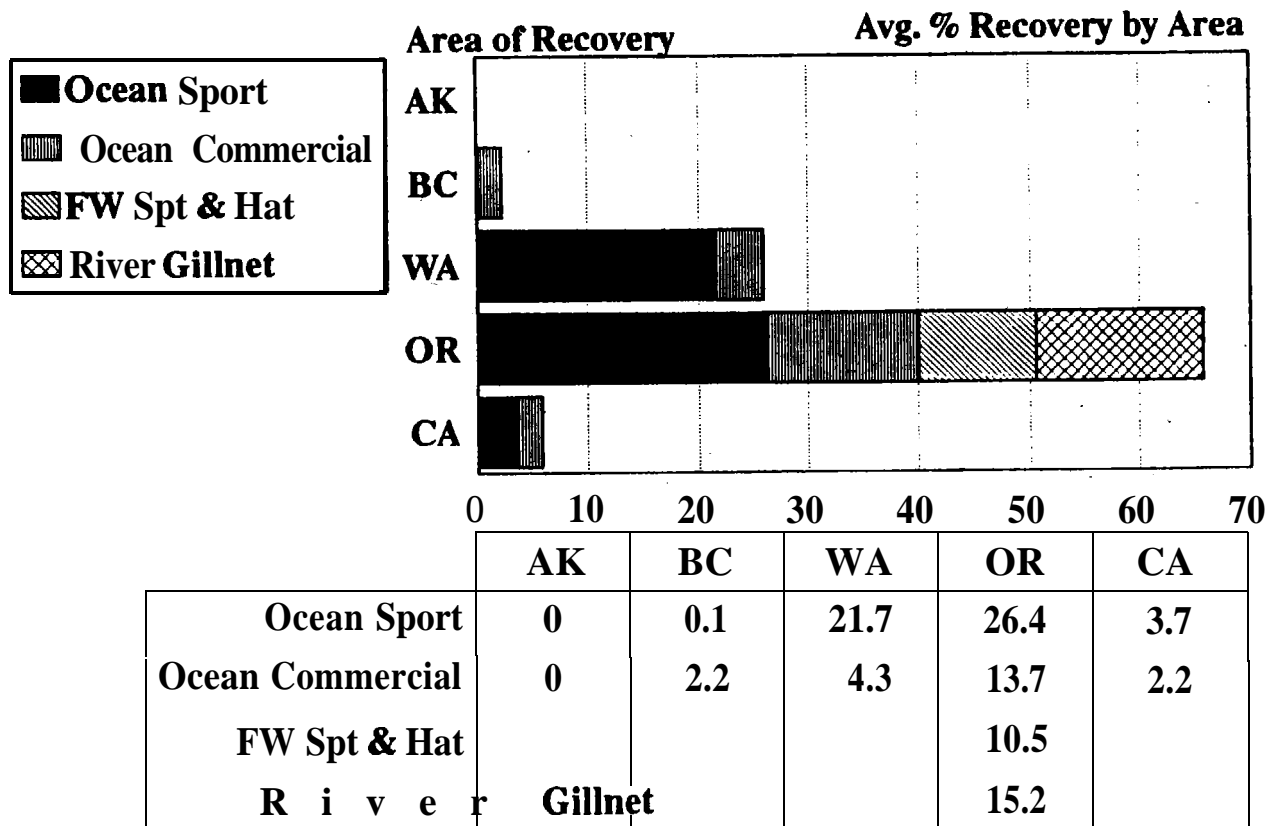


Avg. 1.82 % Survival

Figure 32.

# Cascade Coho Released in Yakima R.

1986 - 1990 Brood Year



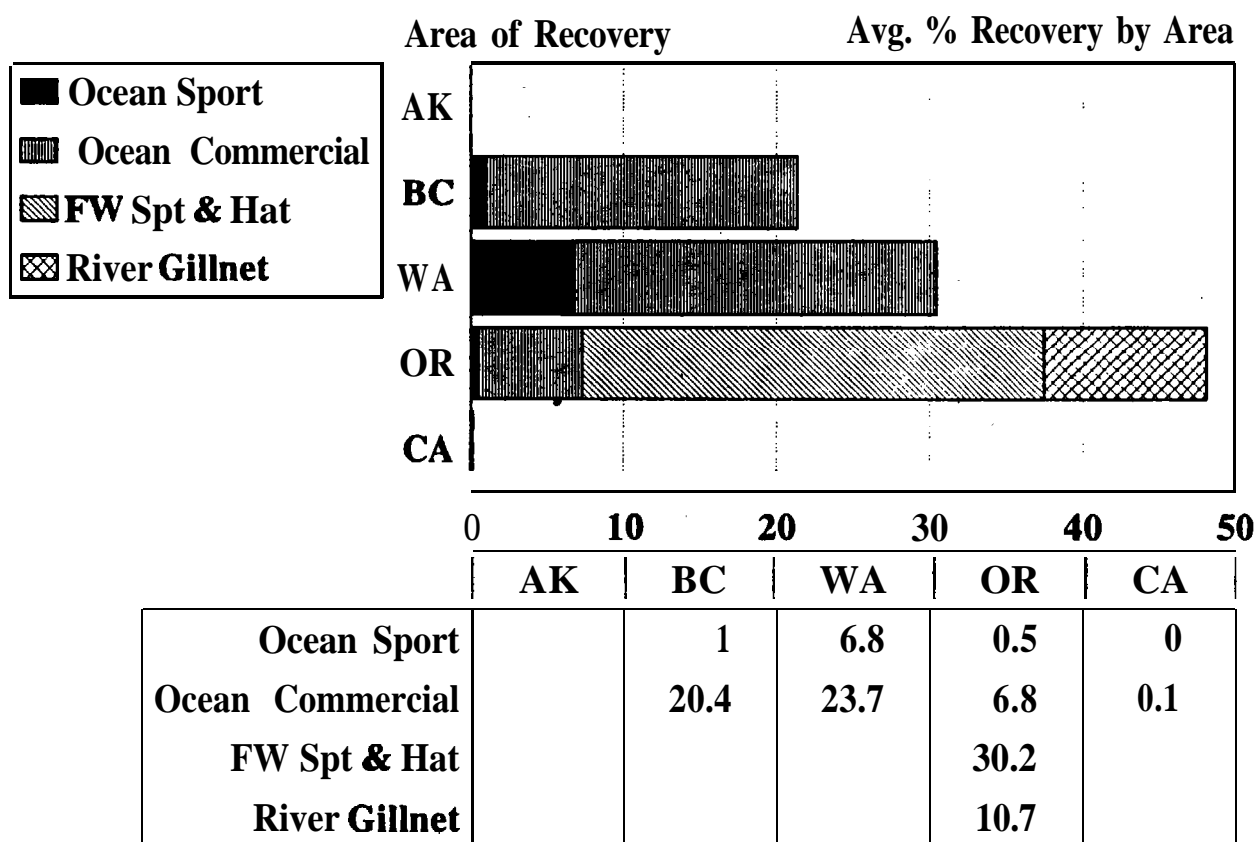
Avg. 0.94 % Survival

Figure 33.



# Bonneville Tule Fall Chinook

1984 - 1988 Brood Year

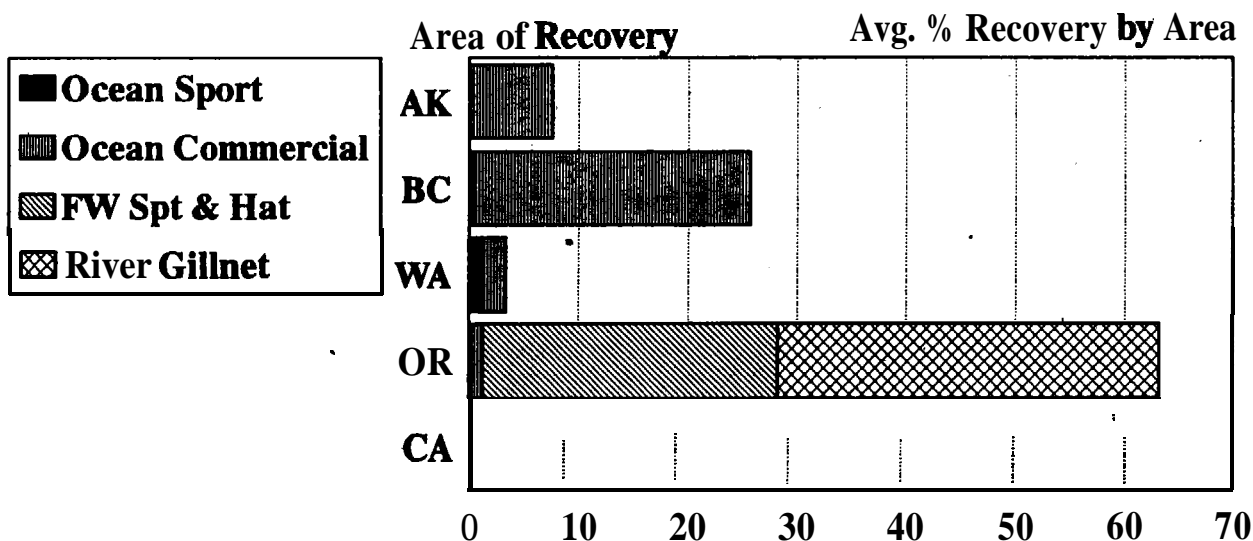


Avg. 0.79 % Survival

Figure 34.

# Bonneville URB Fall-Chinook Released in Tanner Creek

1984 - 1988 Brood Year



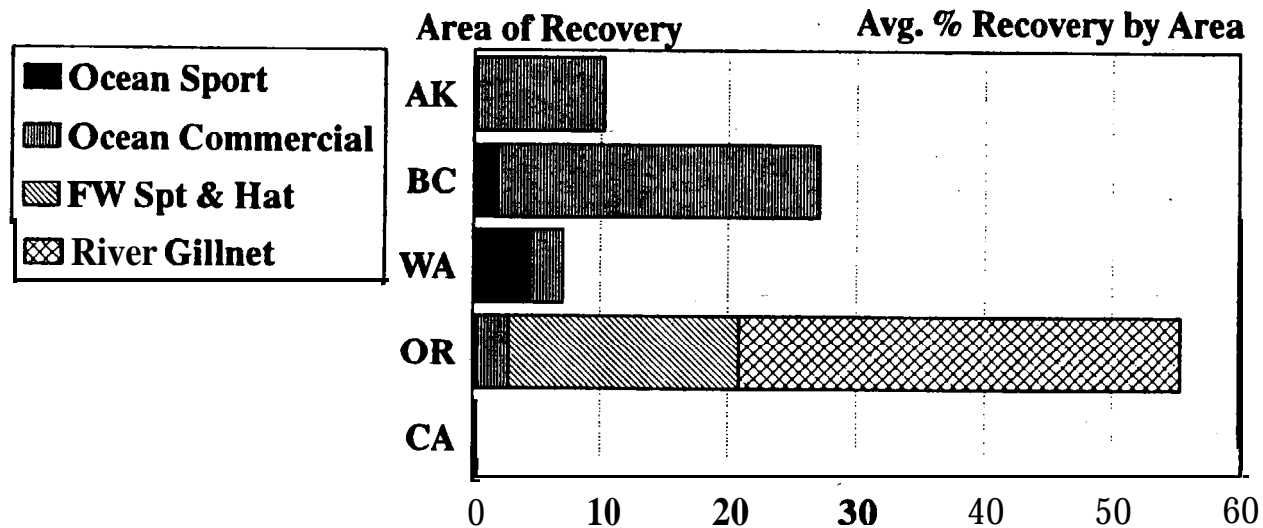
|                  | AK  | BC   | WA  | OR   | CA  |
|------------------|-----|------|-----|------|-----|
| Ocean Sport      | 0.1 | 0.6  | 1.4 | 0.2  | 0.1 |
| Ocean Commercial | 7.5 | 25.1 | 2   | 1.1  | 0.1 |
| FW Spt & Hat     |     |      |     | 26.9 |     |
| River Gillnet    |     |      |     | 34.9 |     |

Avg. 1.56 % Survival

Figure 35.

# Bonneville URB Fall Chinook Released in Umatilla R

1984 - 1987 Brood Year



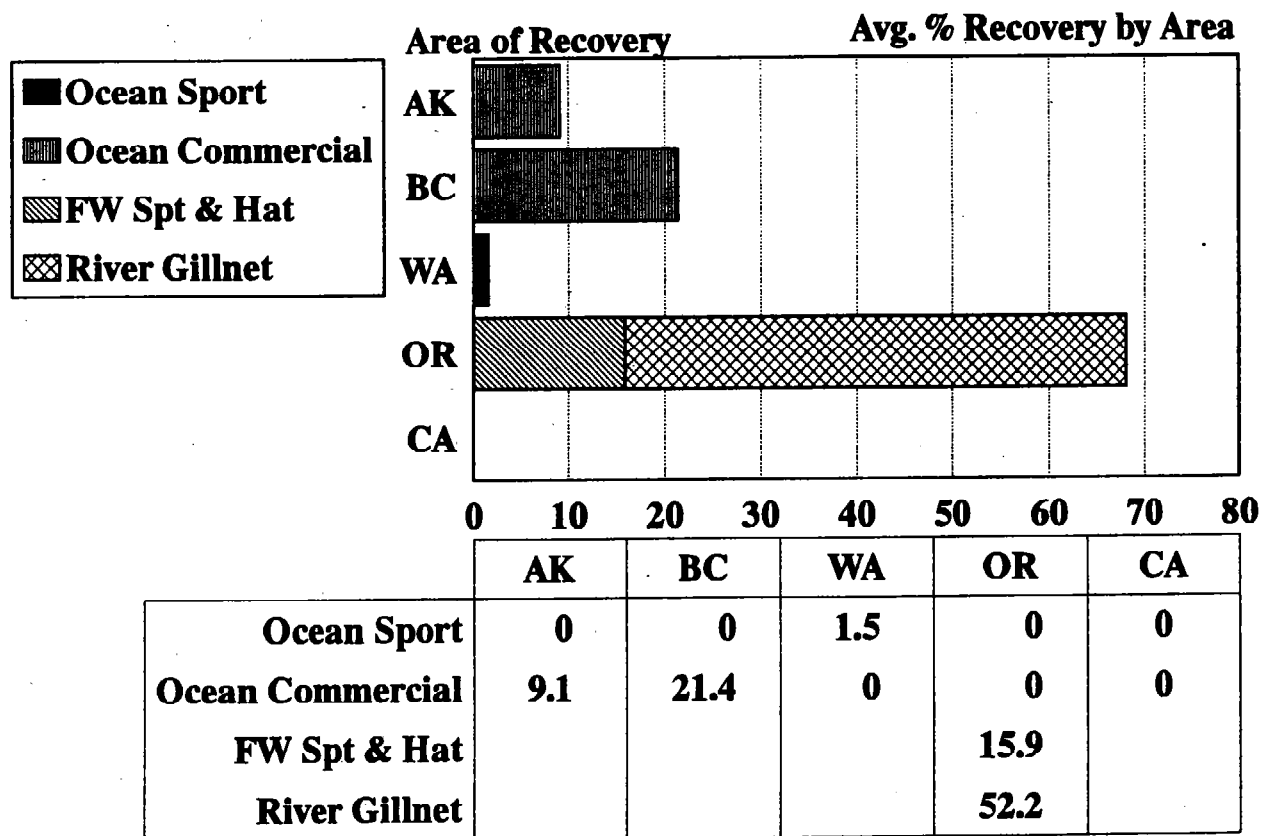
|                  | AK  | BC   | WA  | OR   | CA  |
|------------------|-----|------|-----|------|-----|
| Ocean Sport      | 0.3 | 1.9  | 4.5 | 0.4  | 0.1 |
| Ocean Commercial | 10  | 25.2 | 2.6 | 2.4  | 0.2 |
| FW Spt & Hat     |     |      |     | 18.1 |     |
| River Gillnet    |     |      |     | 34.5 |     |

Avg. 1.60 % Survival

Figure 36.

# Bonneville URB Fall Chinook Released in Mid-Columbia R

1988 Brood Year



**Avg. 0.16 % Survival**

Figure 37.

fisheries and the Columbia River freshwater and gillnet fishery (Figure 37).

The 1986 brood of up river bright summer chinook released in the Columbia River at Bonneville Hatchery survived at an average, rate of 0.22 % and contributed primarily to the Alaska and British Columbia ocean commercial fisheries and the Columbia River gillnet fishery (Figure 38).

The 1986 to 1988 brood of Carson spring chinook chinook released in the Umatilla River survived at an average rate of 0.25 % and contributed primarily to the Columbia River freshwater sport and gillnet fishery (Figure 39).

The 1986 to 1990 brood years of coho released from Bonneville Hatchery survived at an average rate of 2.93% and contributed primarily to the Washington, Oregon and California ocean sport and commercial fisheries and the Columbia River gillnet fishery (Figure 40).

#### oxbow Hatchery

Oxbow Hatchery is located on the Columbia River 2 miles east of Cascade Locks off Highway 84. Oxbow Hatchery rears coho and spring chinook salmon. Part of the coho reared in the Herman Creek ponds are trucked to Bonneville Hatchery for extended rearing and acclimation prior to release at Bonneville. The remainder of the coho started at Oxbow are stocked in Wahkeena Pond for extended rearing and released from that location. Wahkeena Pond is operated as a satellite of Oxbow Hatchery.

The 1984 brood Carson stock spring chinook-reared at Oxbow/Bonneville Hatchery and released in Lookingglass Creek survived at a rate of 0.08 % and contributed primarily the Columbia freshwater sport and Columbia River gillnet fishery (Figure 41).

The 1986 to 1988 brood Carson stock spring chinook reared at Oxbow/Bonneville Hatchery and released in the West Fork of Hood River survived at a rate of 0.19 % and contributed primarily to the Columbia freshwater sport and Columbia River gillnet fishery (Figure 42).

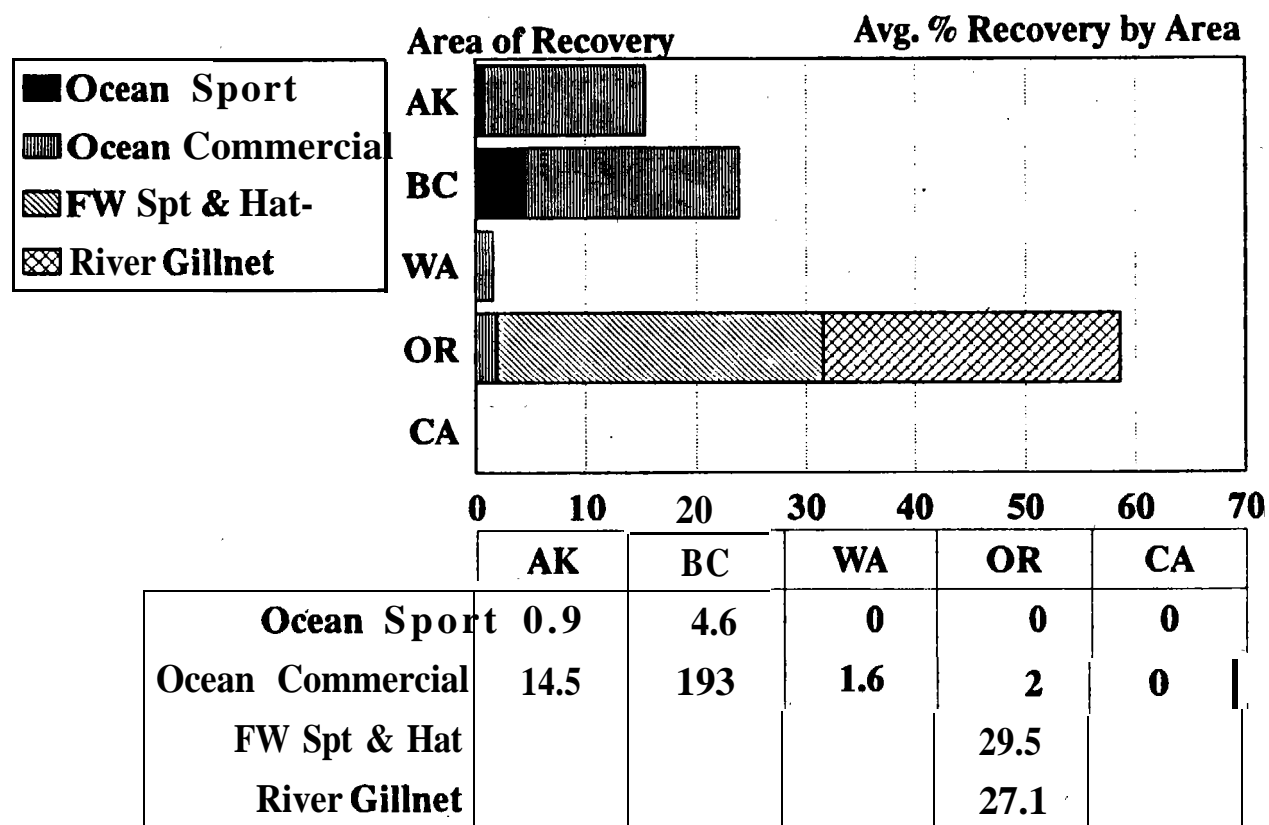
#### Wahkeena Pond

Wahkeena Pond is a natural lake rearing location near Rooster Rock State Park off Highway 84. Coho stocked in Wahkeena Pond are fed daily by the crew from Oxbow Hatchery.

The 1986 to 1990 brood years of coho reared in Wahkeena Pond survived at an average rate of 1.41 % and contributed primarily to the Washington, Oregon and California ocean sport and

# Bonneville URB Summer Chinook Released in Tanner Creek

1986 Brood Year

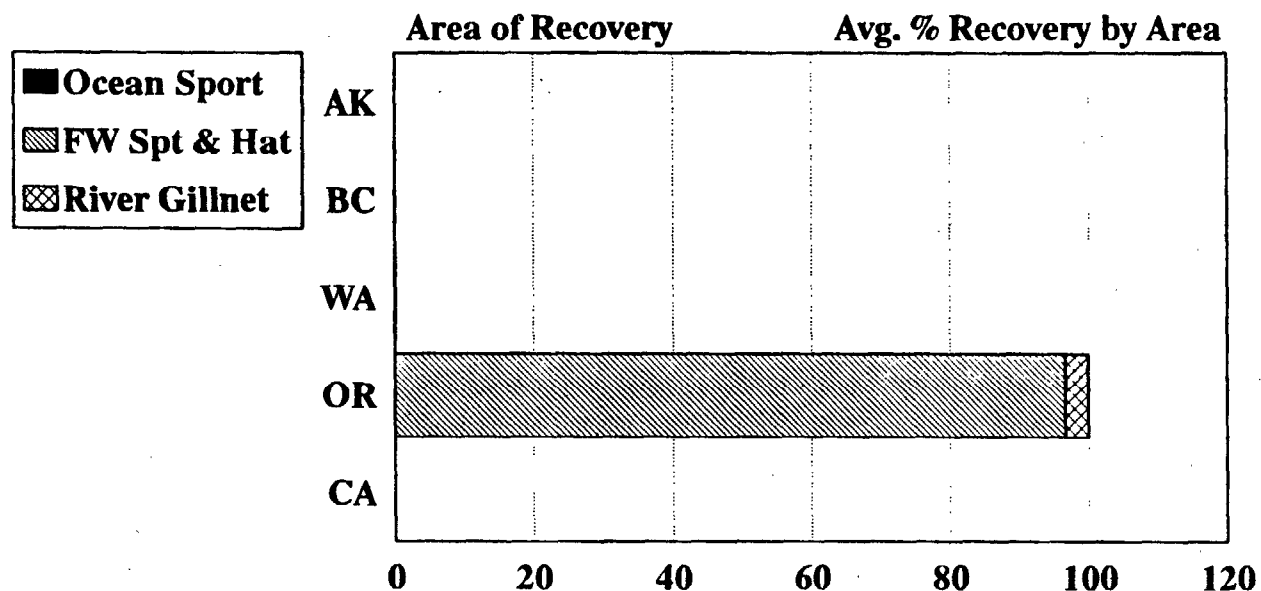


Avg. 0.22 % Survival

Figure 38.

# **Carson Spring Chinook (Bonneville Hat) Released in Umatilla R**

1986 - 1988 Brood Year



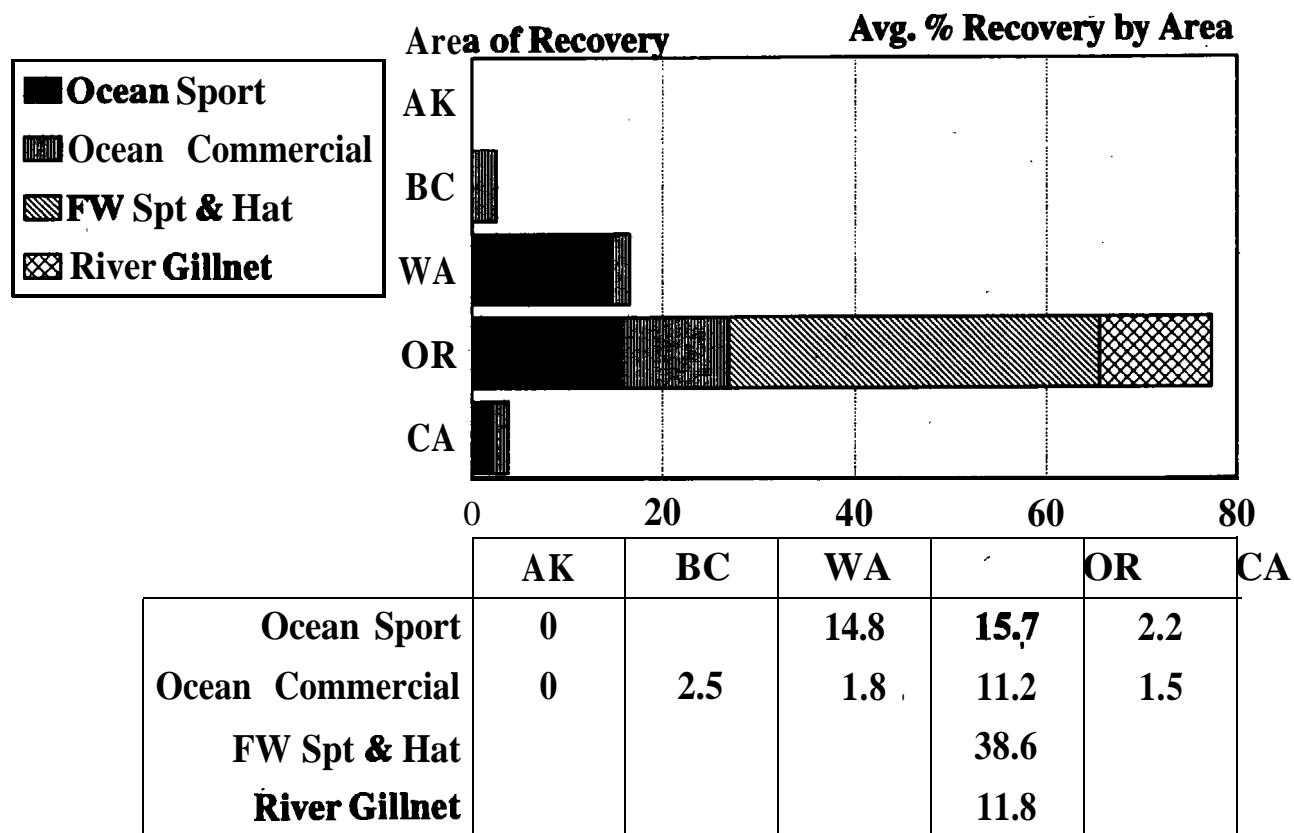
|               | AK | BC | WA  | OR   | CA |
|---------------|----|----|-----|------|----|
| Ocean Sport   |    |    | 0.1 |      |    |
| FW Spt & Hat  |    |    |     | 96.6 |    |
| River Gillnet |    |    |     | 3.3  |    |

Avg. 0.25 % Survival

Figure 39.

# Bonneville Coho Released in Tanner Creek

1986 - 1990 Brood Year



Avg. 2.93 % Survival

Figure 40.

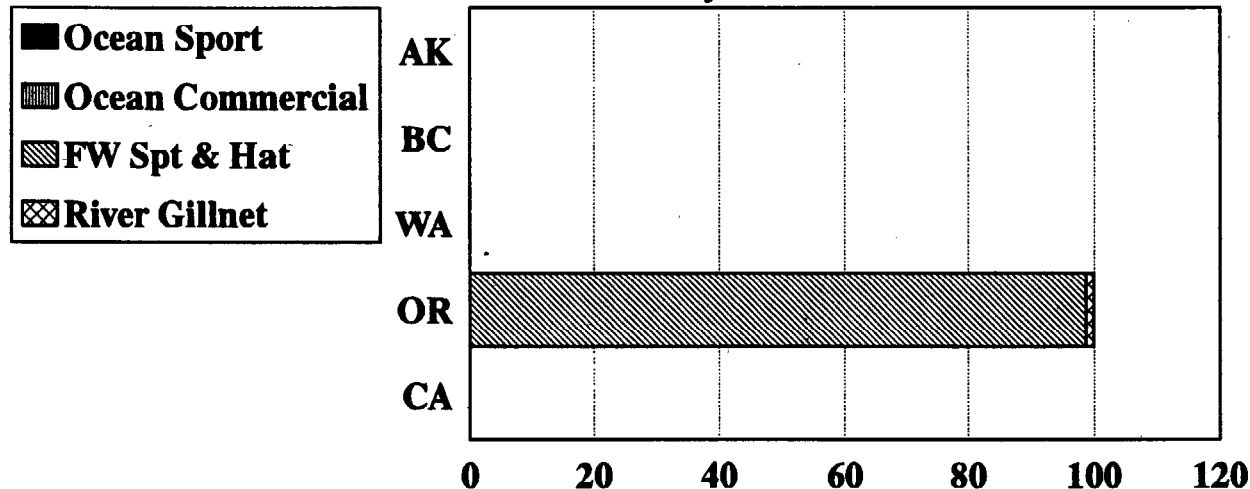


# **Carson Spring Chinook (Bonneville Hat) Released in Lookingglass Creek**

**1984 Brood Year**

**Area of Recovery**

**Avg. % Recovery by Area**



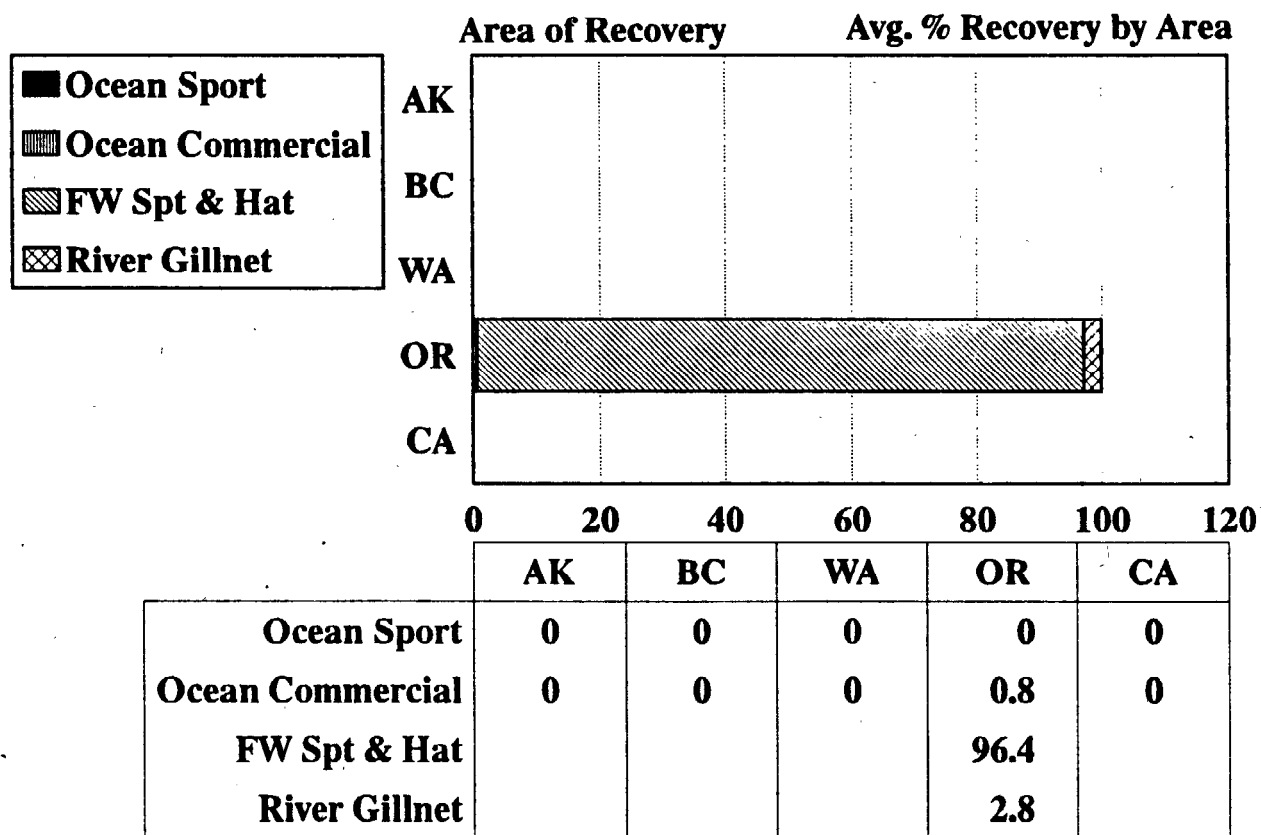
|                  | AK | BC | WA | OR   | CA |
|------------------|----|----|----|------|----|
| Ocean Sport      | 0  | 0  | 0  | 0    | 0  |
| Ocean Commercial | 0  | 0  | 0  | 0    | 0  |
| FW Spt & Hat     |    |    |    | 98.8 |    |
| River Gillnet    |    |    |    | 1.2  |    |

**Avg. 0.08 % Survival**

Figure 41.

# **Carson Spring Chinook (Bonneville Hat) Released in West Fork Hood R.**

**1986 - 1988 Brood Year**



**Avg. 0.19 % Survival**

Figure 42.

commercial fisheries and the Columbia River gillnet fishery (Figure 43).

#### Round Butte Hatchery

Round Butte Hatchery is located at the base of Round Butte Dam on the Deschutes River east of Madras. Round Butte Hatchery rears and releases spring chinook, summer steelhead and brown trout.

The 1984 to 1988 brood years of Deschutes spring chinook reared at Round Butte hatchery and released in the Deschutes River survived at an average rate of 1.74 % and contributed primarily to the freshwater sport fishery in the Columbia and Deschutes Rivers (Figure 44).

The summer steelhead and brown trout released from Round Butte Hatchery have not been coded-wire tagged for evaluation.

#### Oak Springs Hatchery

Oak Springs Hatchery is located on the Deschutes River 3 miles north of Maupin. Oak Springs Hatchery rears and releases summer and winter steelhead and rainbow trout.

The 1987 to 1989 brood Umatilla stock summer steelhead reared at Oaks Springs and released in the Umatilla River survived at an average rate of 0.41 % and contributed primarily to the Columbia River sport and gillnet fisheries (Figure 45).

#### Wizard Falls Hatchery

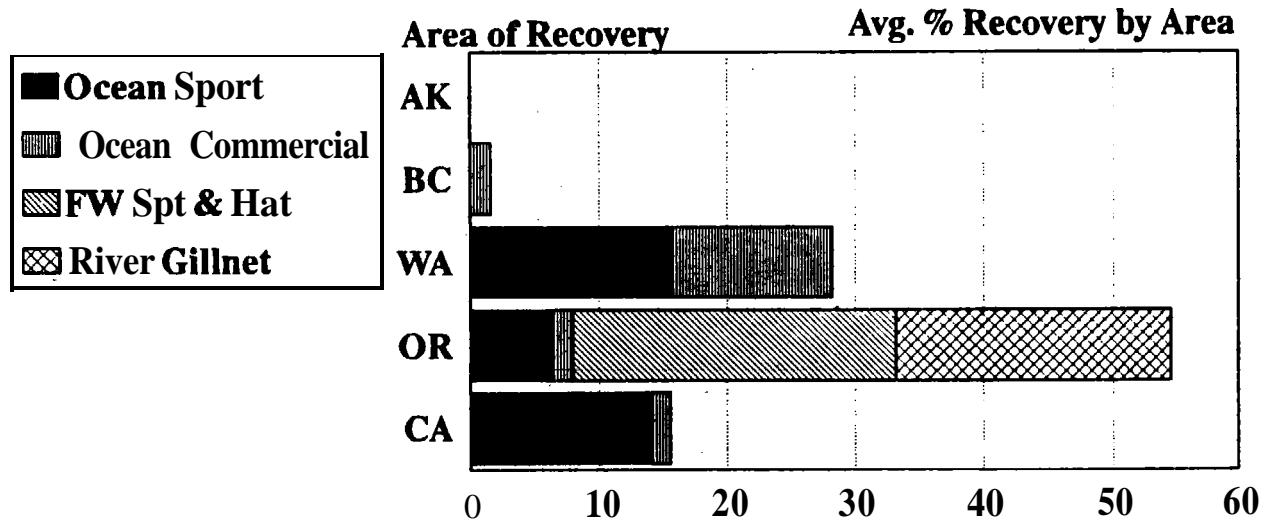
Wizard Falls Hatchery is located on the Metrolis River 2 miles north of Camp Sherman off Highway 20. Wizard Falls Hatchery rears and releases Atlantic and kokanee salmon, brown, brook and rainbow trout. None of these fish have been coded-wire tagged for evaluation.

#### Fall River Hatchery

Fall River Hatchery is located on Fall River, a tributary of the Deschutes River south east of Bend. Fall River Hatchery rears and releases cutthroat, brook and rainbow trout. None of these fish have been coded-wire tagged for evaluation.

# Wahkeena Pond Coho Released in Columbia River

1986 - 1990 Brood Year



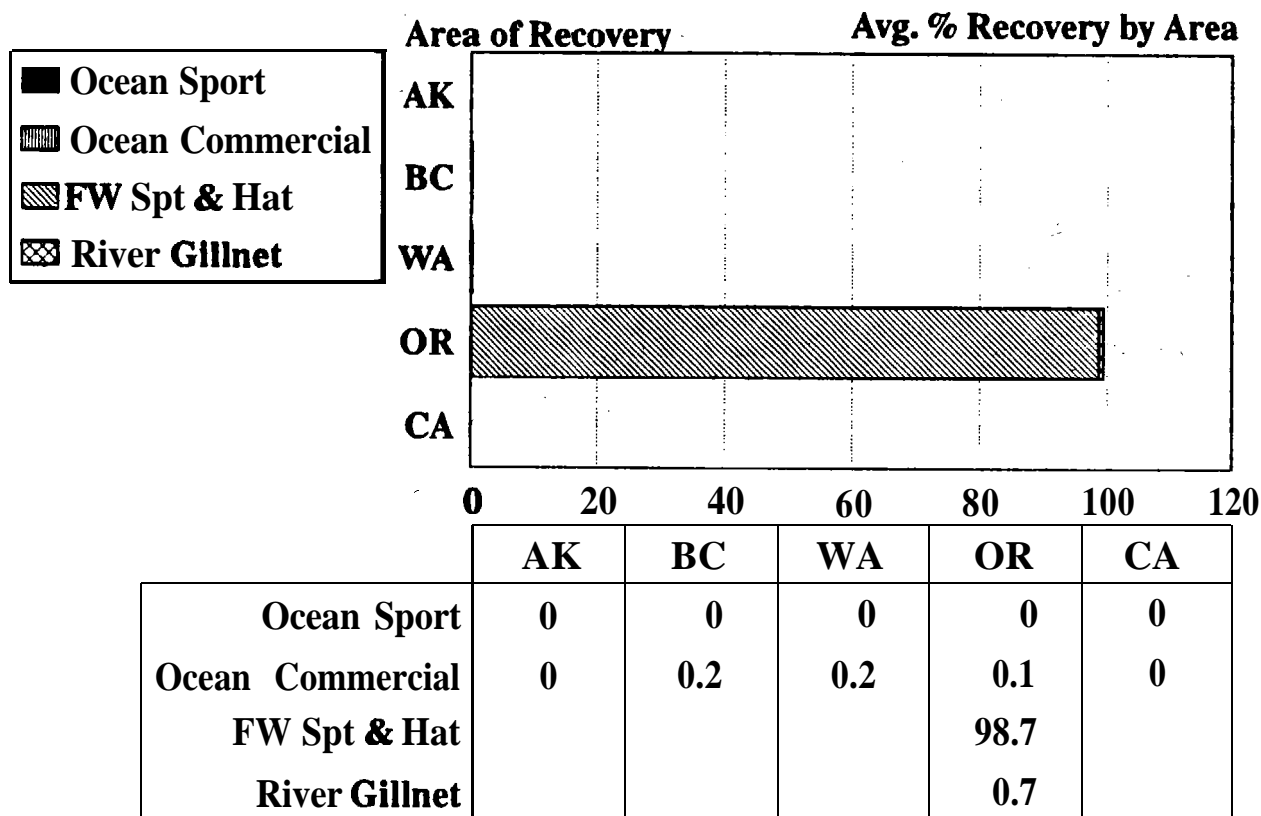
|                  | AK | BC  | WA   | OR   | CA   |
|------------------|----|-----|------|------|------|
| Ocean Sport      | 0  | 0   | 15.8 | 6.5  | 14.2 |
| Ocean Commercial | 0  | 1.6 | 12.4 | 1.5  | 1.4  |
| FW Spt & Hat     |    |     |      | 25.2 |      |
| River Gillnet    |    |     |      | 21.4 |      |

Avg. 1.41 % Survival

Figure 43.

# Round Butte (Deschutes Stock) Spring Chinook Released in Deschutes R.

1984 - 1988 Brood Year

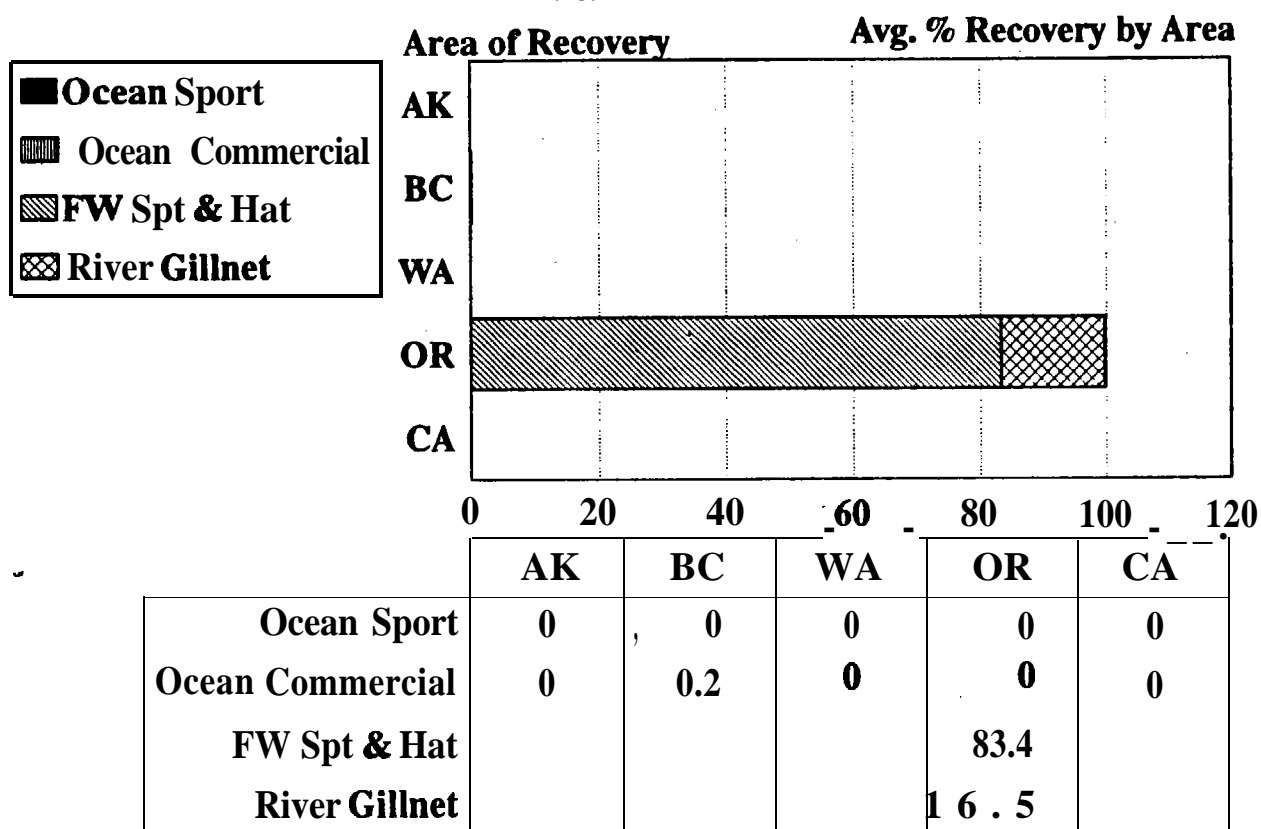


Avg. 1.74 % Survival

Figure 44.

# Oak Springs (Umatilla Stock) Summer Steelhead Released in Spring Creek (Umatilla River)

1987 - 1989 Brood Year



Avg. 0.41% Survival

Figure 45.

## Irrigon Hatchery

Irrigon Hatchery is located on the Columbia River off Highway 730 near Irrigon. Irrigon rears and releases spring and fall chinook salmon, summer steelhead and rainbow trout.

The 1984 to 1988 brood-up river bright fall chinook reared at Irrigon hatchery and released in the Umatilla River survived at an average rate of 0.93 % and contributed primarily to the Alaska and British Columbia ocean commercial fisheries and the Columbia River freshwater sport and gillnet fisheries (Figure 46).

The 1986 to 1988 brood Rapid River stock spring chinook reared at Irrigon hatchery and released in the Lookingglass Creek survived at an average rate of >0.01 %.(Figure 47).

The 1985 to 1989 brood Imnaha stock summer steelhead reared at Irrigon hatchery and released in Little Sheep Creek survived at a rate of 0.56 % and contributed primarily to the Columbia River freshwater sport and gillnet fisheries (Figure 48).

## Umatilla Hatchery

Umatilla Hatchery, constructed in 1990 is located on the Columbia River adjacent to the Irrigon Hatchery. Umatilla Hatchery rears Columbia up-river bright fall chinook salmon and summer steelhead trout. Representative groups of these fish have been coded-wire tagged but no completed recovery data is available at the present time.

## Lookingglass Hatchery

Lookingglass Hatchery is located on Lookingglass Creek, a tributary to the Grande Ronde River north of Elgin. Lookingglass Hatchery rears and releases spring chinook salmon.

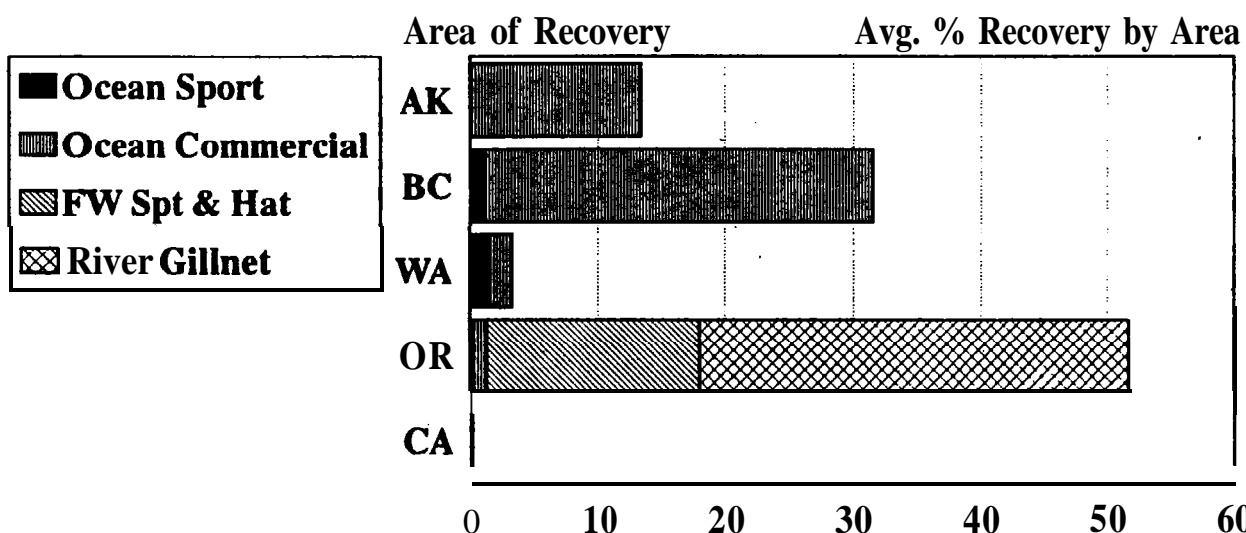
The 1985 to 1988 brood Rapid River stock spring chinook reared a Lookingglass hatchery and released in Lookingglass Creek survived at an average rate of 0.14 % and contributed primarily to the freshwater sport and Columbia river gillnet fisheries . (Figure 49).

The 1984 to 1986 brood Lookingglass stock spring chinook released in Lookingglass Creek survived at an average rate of 0.06 % and contributed to the freshwater sport and Columbia River gillnet fisheries (Figure 50)

The 1984 to 1988 brood Imnaha stock spring chinook released in the Imnaha river survived at an average rate of 0.21 % and contributed to the freshwater sport and Columbia River gillnet fisheries (Figure 51).

# Umatilla URB Fall Chinook (Irrigon Hat) Released in Umatilla R

1984 - 1988 Brood Year



|                  | AK  | BC  | WA  | OR   | CA  |
|------------------|-----|-----|-----|------|-----|
| Ocean Sport      | 0.1 | 1.2 | 1.6 | 0.3  | 0.1 |
| Ocean Commercial | 133 | 303 | 1.7 | 1    | 0   |
| FW Spt & Hat     |     |     |     | 16.7 |     |
| River Gillnet    |     |     |     | 33.7 |     |

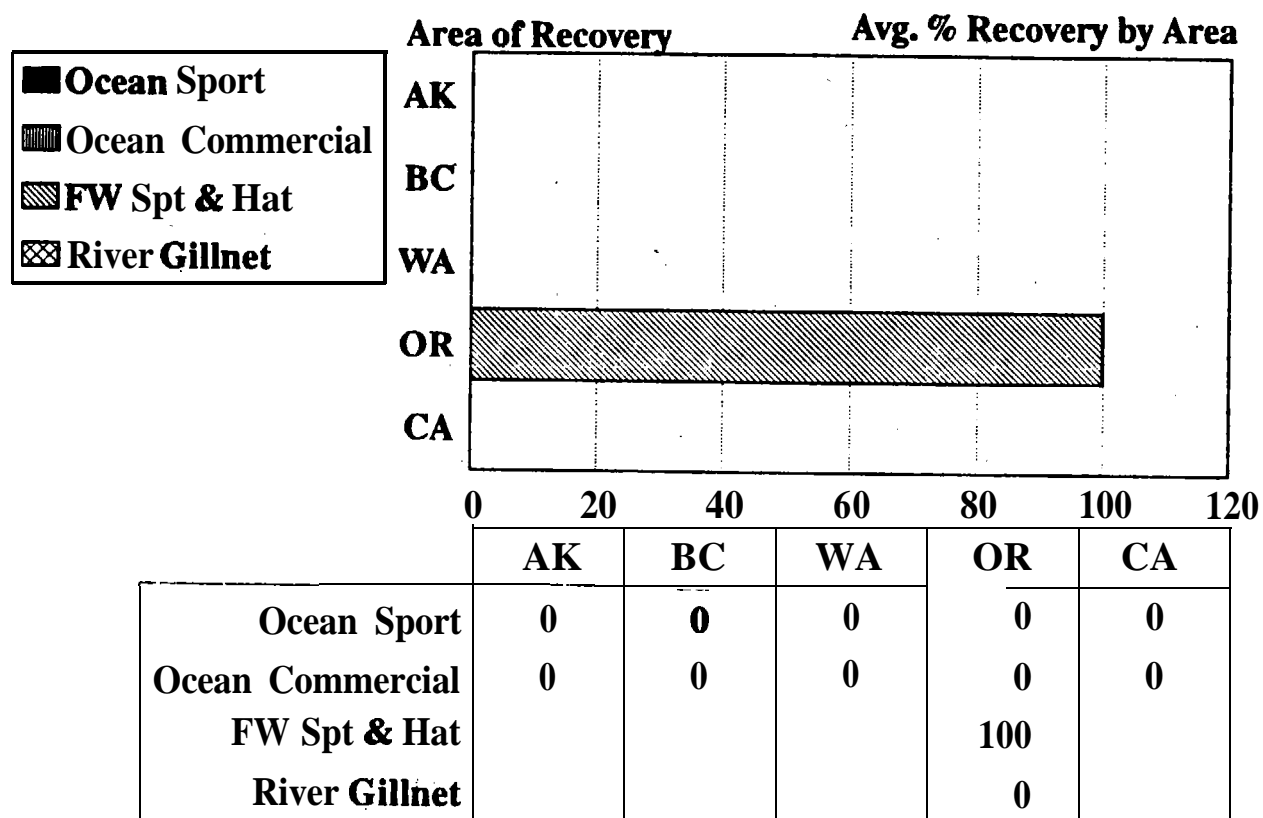
Avg. 0.93 % Survival

Figure 46.



# Irrigon Hat. (Rapid R. Stock) Spring Chinook Released in Lookingglass Cr.

1986 - 1988 Brood Year

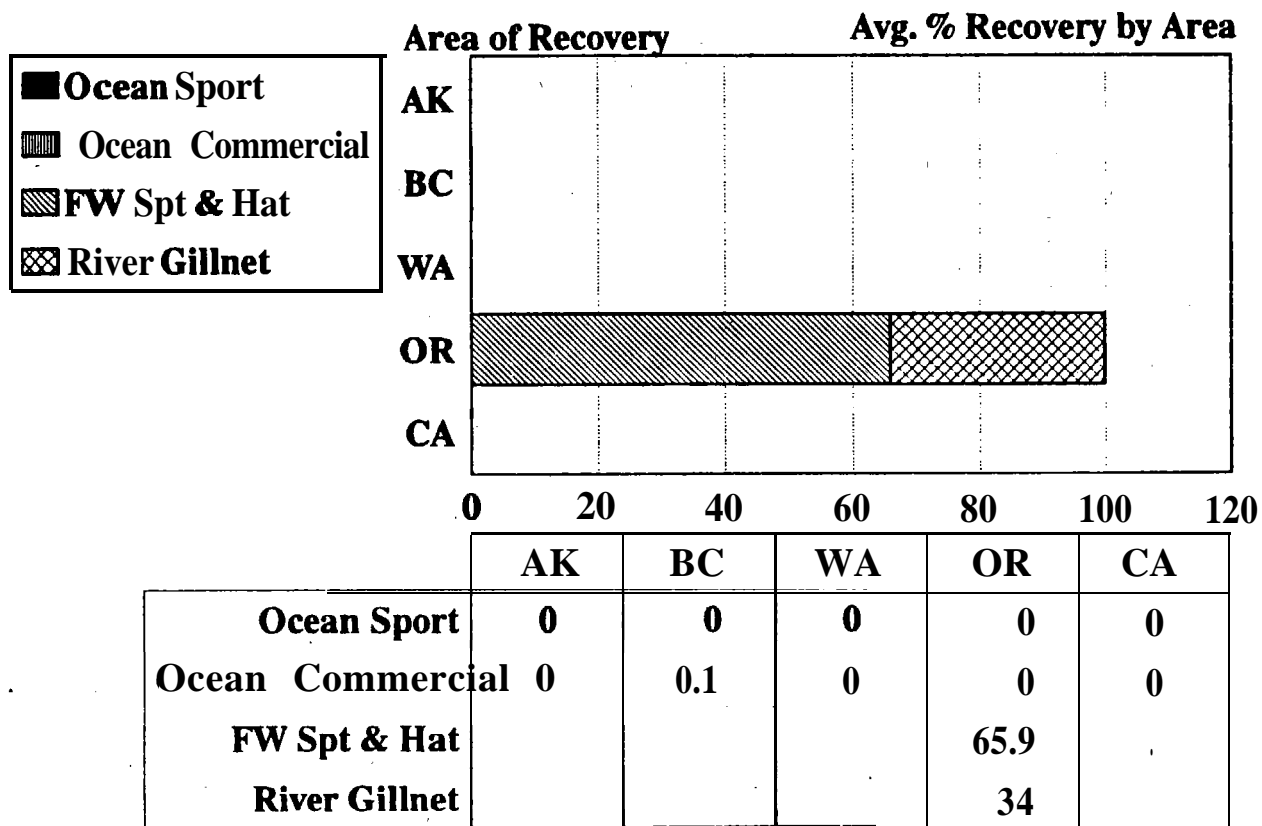


Avg. >0.01 % Survival

Figure 47.

# Irrigon (Imnaha -Stock) Summer Steelhead Released in Sheep Creek (Grande Ronde)

1985 - 1989 Brood Year

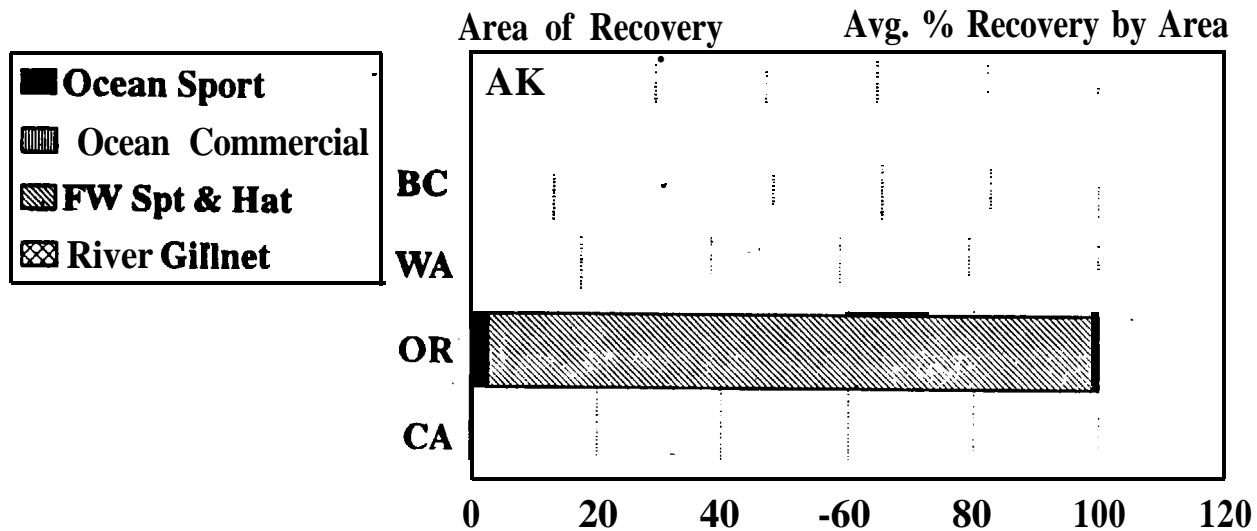


Avg. 0.56 % Survival

Figure 48.

# Rapid River Spring Chinook (Lookingglass Hat) Released in Lookingglass Cr.

1985 - 1988 Brood Year



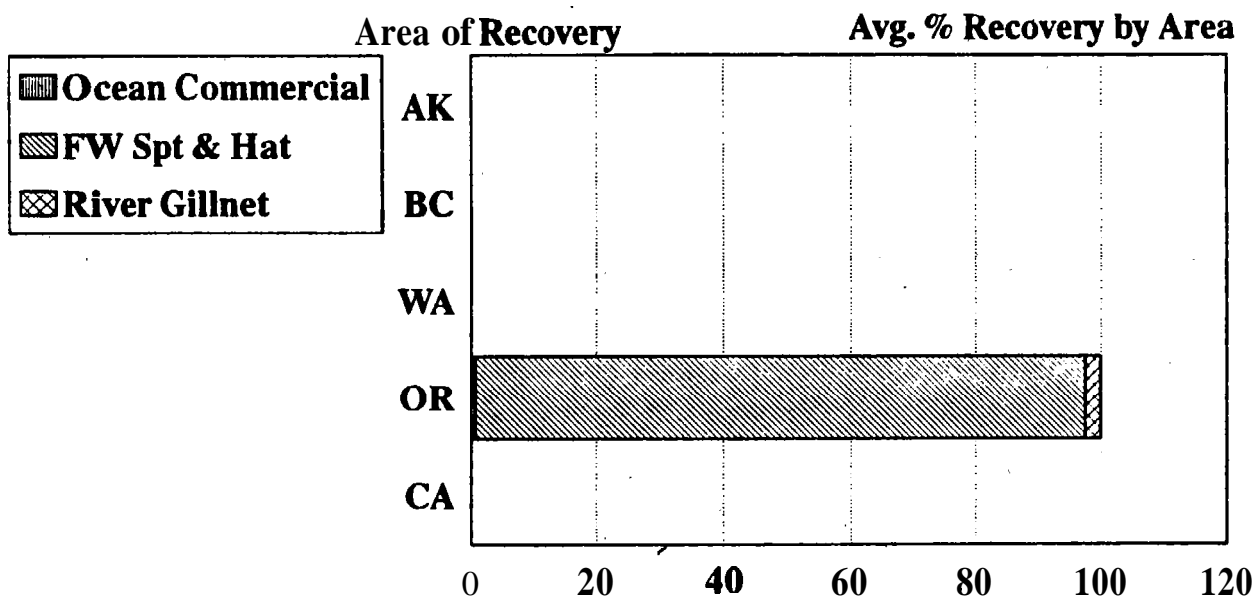
|                  | AK | BC | WA | OR   | CA  |
|------------------|----|----|----|------|-----|
| Ocean Sport      | 0  | 0  | 0  | 2.8  | 0.1 |
| Ocean Commercial | 0  | 0  | 0  | 0    | 0   |
| FW Spt & Hat     |    |    |    | 96.6 |     |
| River Gillnet    |    |    |    | 0.6  |     |

Avg. 0.14 % Survival

Figure 49.

# Lookingglass Spring Chinook Released in Lookingglass Creek

1984 - 1986 Brood Year



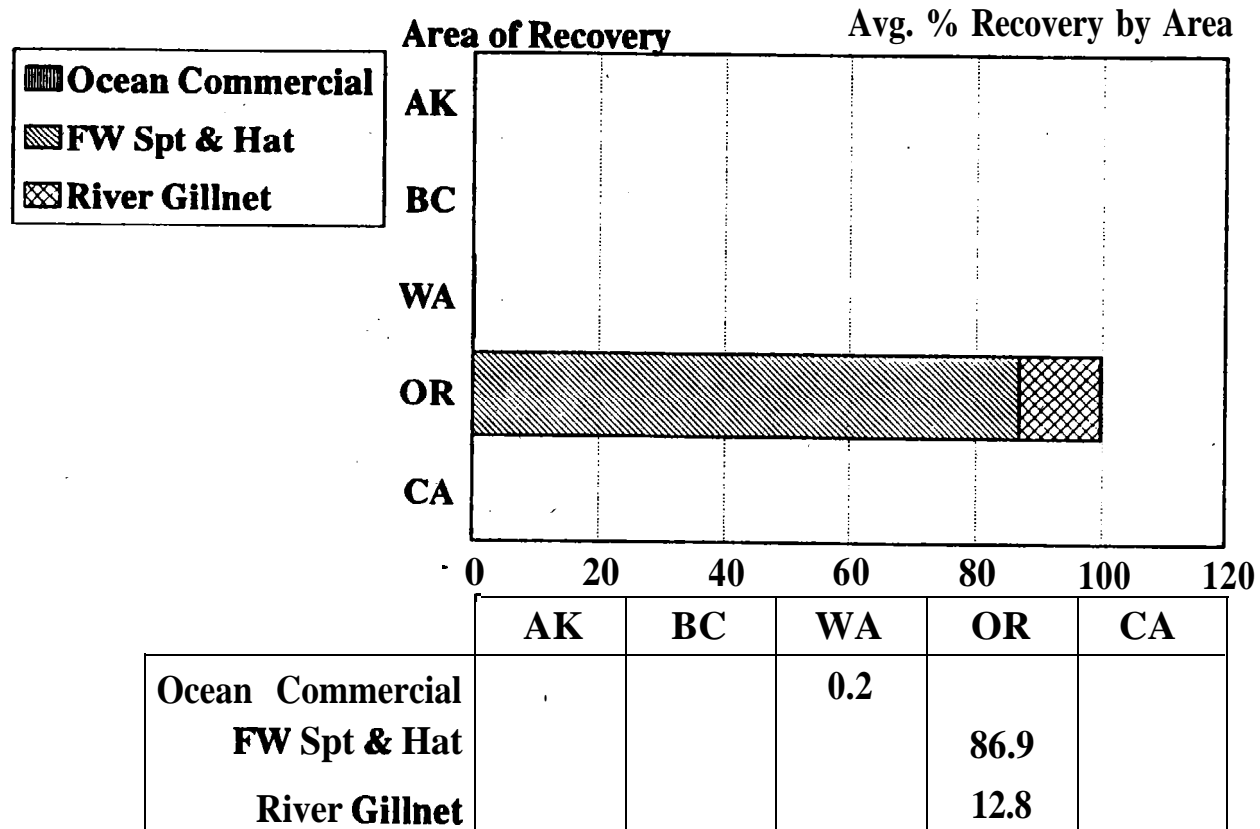
|                  | AK | BC | WA | OR   | CA |
|------------------|----|----|----|------|----|
| Ocean Commercial |    |    |    | 0.6  |    |
| FW Spt & Hat     |    |    |    | 96.9 |    |
| River Gillnet    |    |    |    | 2.5  |    |

Avg. 0.06 % Survival

Figure 50.

# Imnaha Spring Chinook (Lookingglass Hat) Released in Imnaha R

1984 - 1988 Brood Year



Avg. 0.21% Survival

Figure 51.

The 1984 to 1985 Carson stock spring chinook reared at Lookingglass hatchery and released in the Grande Ronde River survived at an average rate of 0.08 % and contributed primarily to the Columbia river freshwater sport and gillnet fisheries (Figure 52).

#### Wallowa Hatchery

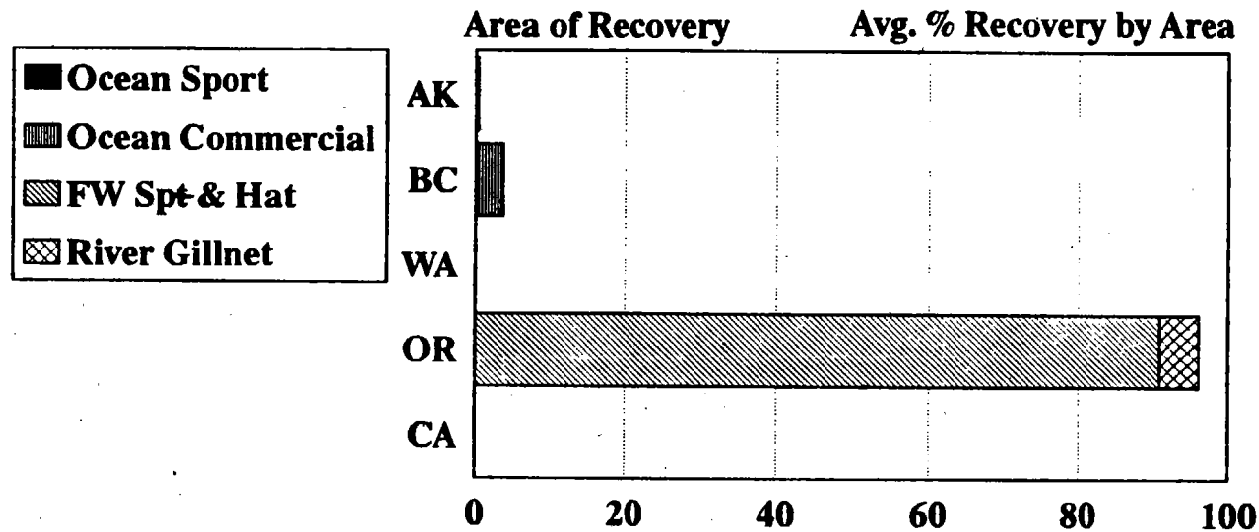
Wallowa Hatchery is located on the Wallowa River near Enterprise. The Wallowa Hatchery rears and releases summer steelhead and rainbow trout.

The 1985 to 1989 brood Wallowa stock summer steelhead reared at Irrigon hatchery, acclimated at Wallowa hatchery and released in Spring Creek (Wallowa River) survived at a rate of 0.77% and contributed primarily to the Columbia River freshwater sport and gillnet fisheries (Figure 53).

Rainbow trout are not tagged for evaluation.

# **Carson Spring Chinook (Lookingglass Hat) Released in Grande Ronde R**

1984 - 1985 Brood Year



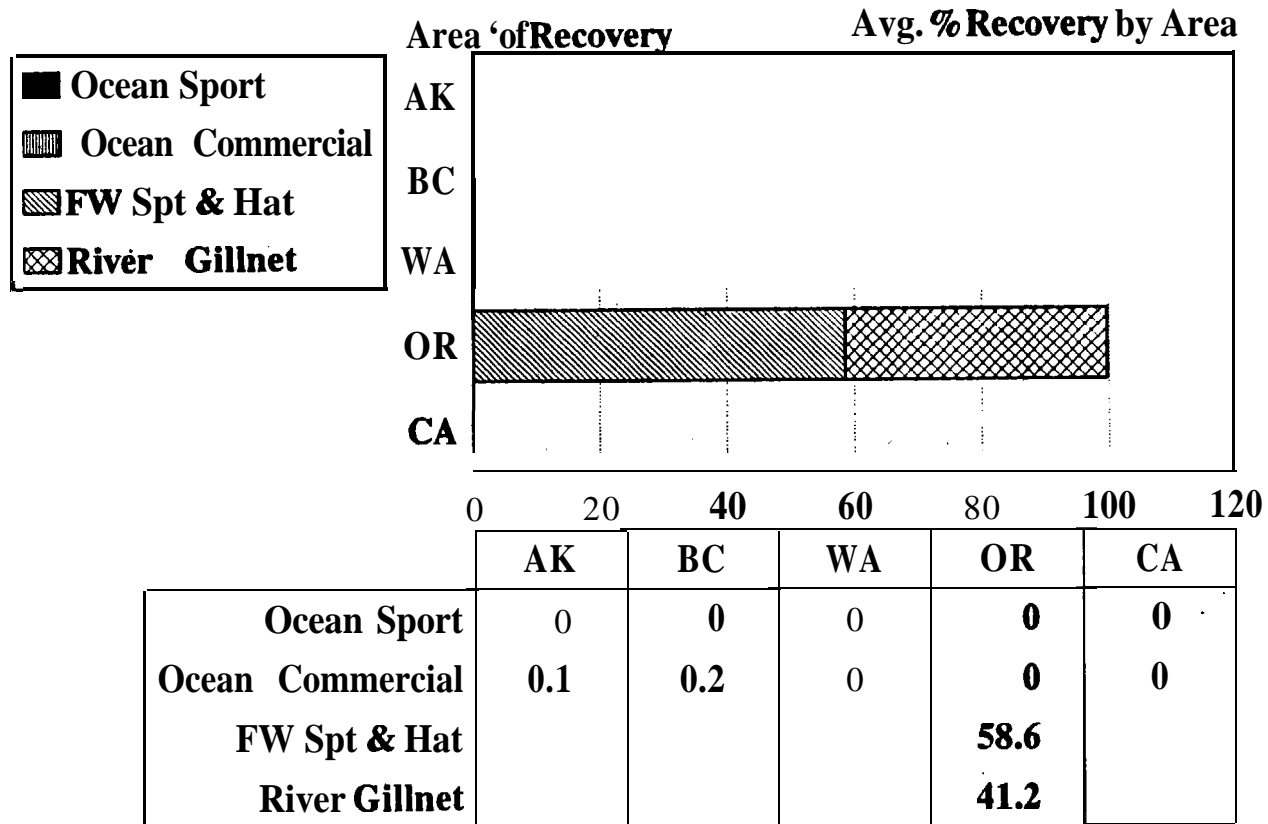
|                  | AK  | BC  | WA | OR   | CA |
|------------------|-----|-----|----|------|----|
| Ocean Sport      | 0.1 |     |    |      |    |
| Ocean Commercial | 0.3 | 3.7 |    |      |    |
| FW Spt & Hat     |     |     |    | 90.9 |    |
| River Gillnet    |     |     |    | 5.1  |    |

Avg. 0.08 % Survival

Figure 52.

# Irrigon (Wallowa Stock) Summer S steelhead Released in Spring Creek (Wallowa River)

1985 - 1989 Brood Year



Avg. 0.77% Survival

Figure 53.



## APPENDIX

Appendix Table 1 Average Percent Recovery (by Fishery) for the Last 5 Completed Brood years

(Chinook 1984 to 1988 broods, Coho 1986 to 1990 broods, Steelhead 1985 to 1989 broods)

Data downloaded October 1994 (through Preliminary 1993 returns)

|              |         |               |                |       |         |       |            |            |      |   | Percent Recovery for All Areas |      |             |      |            |      |        |      |            |            |            |      |
|--------------|---------|---------------|----------------|-------|---------|-------|------------|------------|------|---|--------------------------------|------|-------------|------|------------|------|--------|------|------------|------------|------------|------|
|              |         |               |                |       | Number  |       |            |            |      | % |                                |      |             |      |            |      |        |      |            |            |            |      |
| Fall Chinook |         |               |                |       | AD Clip |       | Total      |            |      |   | Alaska                         |      | British Col |      | Washington |      | Oregon |      | Freshwater |            | California |      |
| Hatchery     | Species | Stock         | Release Site   | Brood | Tagged  | Only  | Untagged   | Released   | Surv |   | Spt                            | Com  | Spt         | Com  | Spt        | Com  | Spt    | Com  | Gillnet    | Freshwater | Spt        | Com  |
| Bonneville   | Chf     | Tanner Cr     | Tanner Cr      | 1984  | 317,321 | 8,998 | 552,982    | 877,301    | 2.77 |   | 0.0                            | 0.0  | 2.2         | 28.8 | 6.2        | 11.2 | 0.5    | 6.3  | 20.0       | 28.5       | 0.1        | 0.2  |
| Bonneville   | Chf     | Tanner Cr     | Tanner Cr      | 1986  | 421,391 | 5,200 | 9,457,658  | 9,884,249  | 0.15 |   | 0.0                            | 0.0  | 0.5         | 14.8 | 2.2        | 22.9 | 0.1    | 16.2 | 9.4        | 33.9       | 0.0        | 0.0  |
| Bonneville   | Chf     | Tanner Cr     | Tanner Cr      | 1987  | 315,879 | 3,998 | 9,785,318  | 10,104,995 | 0.02 |   | 0.0                            | 0.0  | 0.4         | 24.2 | 2.3        | 43.6 | 0.0    | 0.7  | 8.1        | 20.8       | 0.0        | 0.0  |
| Bonneville   | Chf     | Tanner Cr     | Tanner Cr      | 1988  | 316,288 | 2,203 | 11,319,521 | 11,638,012 | 0.22 |   | 0.0                            | 0.0  | 0.7         | 15.8 | 16.6       | 17.2 | 1.3    | 4.0  | 5.1        | 39.4       | 0.0        | 0.0  |
| Average      |         |               |                |       | 342,670 | 4,600 | 7,778,870  | 8,128,139  | 0.79 |   | 0.0                            | 0.0  | 1.0         | 20.4 | 6.8        | 23.7 | 0.5    | 6.8  | 10.7       | 30.2       | 0.0        | 0.1  |
|              |         |               |                |       |         |       |            |            |      |   |                                |      |             |      |            |      |        |      |            |            |            |      |
| Bonneville   | Chf     | URB           | Tanner Cr      | 1984  | 50,346  | 194   | 51,108     | 101,848    | 3.52 |   | 0.1                            | 3.8  | 1.2         | 34.7 | 2.8        | 3.8  | 0.6    | 1.9  | 37.3       | 13.7       | 0.3        | 0.0  |
| Bonneville   | Chf     | URB           | Tanner Cr      | 1985  | 427,815 | 7,040 | 1,407,871  | 1,842,326  | 2.82 |   | 0.3                            | 10.6 | 0.2         | 23.4 | 1.9        | 0.8  | 0.2    | 0.8  | 34.7       | 28.9       | 0.3        | 0.0  |
| Bonneville   | Chf     | URB           | Tanner Cr      | 1986  | 582,442 | 4,208 | 515,408    | 1,102,058  | 1.08 |   | 0.1                            | 11.4 | 1.1         | 24.9 | 1.3        | 2.1  | 0.1    | 2.9  | 22.5       | 33.3       | 0.1        | 0.3  |
| Bonneville   | Chf     | URB           | Tanner Cr      | 1987  | 183,508 | 1,183 | 5,621,188  | 5,805,859  | 0.28 |   | 0.0                            | 5.7  | 0.7         | 14.5 | 0.9        | 1.0  | 0.1    | 0.0  | 50.6       | 28.5       | 0.0        | 0.0  |
| Bonneville   | Chf     | URB           | Tanner Cr      | 1988  | 100,106 | 1,526 | 0          | 101,692    | 0.13 |   | 0.0                            | 6.1  | 0.0         | 27.8 | 0.0        | 2.7  | 0.0    | 0.0  | 29.4       | 34.0       | 0.0        | 0.0  |
| Average      |         |               |                |       | 268,815 | 2,826 | 1,519,075  | 1,790,716  | 1.56 |   | 0.1                            | 7.5  | 0.6         | 25.1 | 1.4        | 2.0  | 0.2    | 1.1  | 34.9       | 28.9       | 0.1        | 0.1  |
|              |         |               |                |       |         |       |            |            |      |   |                                |      |             |      |            |      |        |      |            |            |            |      |
| Bonneville   | Chf     | URB           | Mid-Columbia R | 1988  | 101,050 | 508   | 0          | 101,558    | 0.16 |   | 0.0                            | 9.1  | 0.0         | 21.4 | 1.5        | 0.0  | 0.0    | 0.0  | 52.2       | 15.9       | 0.0        | 0.0  |
|              |         |               |                |       |         |       |            |            |      |   |                                |      |             |      |            |      |        |      |            |            |            |      |
| Bonneville   | Chf     | URB           | Umatilla R     | 1984  | 237,594 | 5,939 | 3,030,639  | 3,274,172  | 0.87 |   | 0.2                            | 12.8 | 0.6         | 22.0 | 1.1        | 2.0  | 0.0    | 1.6  | 49.6       | 9.6        | 0.0        | 0.3  |
| Bonneville   | Chf     | URB           | Umatilla R     | 1985  | 100,127 | 1,260 | 110,119    | 211,508    | 2.28 |   | 0.5                            | 9.2  | 2.6         | 25.6 | 5.2        | 2.7  | 0.5    | 1.9  | 36.7       | 15.1       | 0.0        | 0.0  |
| Bonneville   | Chf     | URB           | Umatilla R     | 1986  | 158,960 | 1,146 | 40,235     | 200,341    | 2.77 |   | 0.1                            | 7.6  | 0.7         | 27.8 | 4.1        | 3.4  | 1.0    | 2.3  | 23.8       | 29.1       | 0.3        | 0.0  |
| Bonneville   | Chf     | Wash. Brights | Umatilla R     | 1987  | 66,408  | 4,281 | 3,400      | 94,089     | 0.49 |   | 0.3                            | 10.3 | 3.6         | 25.5 | 7.6        | 2.1  | 0.2    | 3.7  | 27.8       | 18.6       | 0.0        | 0.4  |
| Average      |         |               |                |       | 145,772 | 3,157 | 798,098    | 945,027    | 1.60 |   | 0.3                            | 10.0 | 1.9         | 25.2 | 4.5        | 2.6  | 0.4    | 2.4  | 34.5       | 18.1       | 0.1        | 0.2  |
|              |         |               |                |       |         |       |            |            |      |   |                                |      |             |      |            |      |        |      |            |            |            |      |
| Big Creek    | Chf     | Big Creek     | Big Cr         | 1986  | 309,518 | 3,038 | 8,379,938  | 8,692,492  | 0.18 |   | 0.0                            | 0.0  | 0.0         | 26.7 | 7.3        | 25.5 | 0.0    | 10.3 | 2.5        | 28.6       | 0.0        | 1.1  |
| Big Creek    | Chf     | Big Creek     | Big Cr         | 1987  | 313,024 | 4,032 | 8,534,864  | 8,851,920  | 0.05 |   | 0.0                            | 0.0  | 1.6         | 25.7 | 25.8       | 9.0  | 2.3    | 3.3  | 2.1        | 30.3       | 0.0        | 0.0  |
| Big Creek    | Chf     | Big Creek     | Big Cr         | 1988  | 316,016 | 995   | 10,258,999 | 10,576,010 | 0.17 |   | 0.0                            | 0.0  | 1.8         | 22.4 | 10.2       | 20.4 | 0.0    | 2.7  | 8.4        | 34.2       | 0.0        | 0.0  |
| Average      |         |               |                |       | 312,852 | 2,688 | 9,057,934  | 9,373,474  | 0.13 |   | 0.0                            | 0.0  | 1.1         | 24.9 | 14.4       | 18.3 | 0.8    | 5.4  | 4.3        | 30.4       | 0.0        | 0.4  |
|              |         |               |                |       |         |       |            |            |      |   |                                |      |             |      |            |      |        |      |            |            |            |      |
| Big Creek    | Chf     | Rogue R       | Big Cr         | 1984  | 98,850  | 2,768 | 0          | 101,618    | 3.74 |   | 0.0                            | 0.0  | 0.1         | 2.6  | 4.0        | 3.8  | 1.7    | 48.5 | 18.7       | 12.5       | 0.2        | 8.0  |
| Big Creek    | Chf     | Rogue R       | Big Cr         | 1985  | 145,544 | 244   | 244        | 146,032    | 2.08 |   | 0.0                            | 0.0  | 0.2         | 2.8  | 2.7        | 1.6  | 3.3    | 54.6 | 8.6        | 14.7       | 0.4        | 11.1 |
| Big Creek    | Chf     | Rogue R       | Big Cr         | 1986  | 156,574 | 590   | 1,180      | 158,344    | 2.26 |   | 0.0                            | 0.0  | 0.6         | 2.9  | 8.4        | 2.1  | 3.8    | 46.9 | 3.2        | 26.3       | 2.0        | 3.9  |
| Big Creek    | Chf     | Rogue R       | Big Cr         | 1987  | 148,571 | 5,293 | 0          | 153,864    | 2.25 |   | 0.0                            | 0.0  | 0.1         | 3.1  | 10.9       | 2.0  | 4.5    | 42.0 | 2.5        | 31.7       | 0.2        | 3.1  |
| Big Creek    | Chf     | Rogue R       | Big Cr         | 1988  | 155,334 | 531   | 0          | 155,865    | 1.33 |   | 0.0                            | 0.0  | 0.1         | 3.2  | 7.8        | 3.8  | 4.1    | 31.3 | 4.6        | 40.6       | 1.4        | 3.1  |
| Average      |         |               |                |       | 140,975 | 1,885 | 285        | 143,145    | 2.33 |   | 0.0                            | 0.0  | 0.2         | 2.9  | 6.8        | 2.7  | 3.5    | 44.7 | 7.5        | 25.2       | 0.8        | 5.8  |

Appendix Table 1. Average Percent Recovery (by Fishery) for the Last 5 Completed Brood years

(Chinook 1984 to 1988 broods; Coho 1986 to 1990 broods; Steelhead 1985 to 1989 broods)

Data downloaded October 1994 (through Preliminary 1993 returns)

|              |         |                |                    |       |         |        |           |           |          | Percent Recovery for All Areas |      |             |      |            |      |        |      |            |         |            |      |
|--------------|---------|----------------|--------------------|-------|---------|--------|-----------|-----------|----------|--------------------------------|------|-------------|------|------------|------|--------|------|------------|---------|------------|------|
|              |         |                |                    |       | Number  |        |           | Total     | %        |                                |      |             |      |            |      |        |      |            |         |            |      |
|              |         |                |                    |       | AD Clip |        | Surv      |           |          | Alaska                         |      | British Col |      | Washington |      | Oregon |      | Freshwater |         | California |      |
| Hatchery     | Species | Stock          | Release Site       | Brood | Tagged  | Only   |           | Untagged  | Released |                                | Spt  | Com         | Spt  | Com        | Spt  | Com    | Spt  | Com        | Gillnet | Freshwater | Spt  |
| Fall Chinook |         |                |                    |       |         |        |           |           |          |                                |      |             |      |            |      |        |      |            |         |            |      |
| Imgon        | Chf     | URB            | Umatilla R         | 1984  | 88,396  | 2,214  | 118,205   | 206,815   | 3.18     | 0.1                            | 4.9  | 2.0         | 35.5 | 4.0        | 6.8  | 0.8    | 1.8  | 34.6       | 9.6     | 0.0        | 0.0  |
| Imgon        | Chf     | URB            | Umatilla R         | 1985  | 209,145 | 4,658  | 1,815,799 | 2,029,802 | 0.50     | 0.0                            | 9.1  | 0.9         | 21.6 | 1.2        | 0.4  | 0.4    | 1.6  | 43.6       | 21.2    | 0.0        | 0.0  |
| Imgon        | Chf     | Wash. Brights  | Umatilla R         | 1986  | 122,998 | 4,589  | 1,351,245 | 1,478,830 | 0.81     | 0.3                            | 13.8 | 0.8         | 27.1 | 1.4        | 1.3  | 0.4    | 1.3  | 37.4       | 15.8    | 0.5        | 0.0  |
| Imgon        | Chf     | Wash. Brights  | Umatilla R         | 1987  | 198,285 | 0      | 1,888,472 | 1,888,757 | 0.07     | 0.0                            | 20.0 | 0.0         | 35.0 | 1.4        | 0.0  | 0.0    | 0.0  | 25.0       | 18.6    | 0.0        | 0.0  |
| Imgon        | Chf     | Wash. Brights  | Umatilla R         | 1988  | 307,482 | 8,703  | 2,234,472 | 2,550,887 | 0.10     | 0.0                            | 18.7 | 2.4         | 32.5 | 0.0        | 0.2  | 0.1    | 0.1  | 27.8       | 18.3    | 0.0        | 0.0  |
| Average      |         |                |                    |       | 185,263 | 4,033  | 1,441,239 | 1,830,534 | 0.93     | 0.1                            | 13.3 | 1.2         | 30.3 | 1.6        | 1.7  | 0.3    | 1.0  | 33.7       | 16.7    | 0.1        | 0.0  |
|              |         |                |                    |       |         |        |           |           |          |                                |      |             |      |            |      |        |      |            |         |            |      |
| Klaskanine   | Chf     | Big Creek      | Klaskanine R, N Fk | 1986  | 194,857 | 10,463 | 3,555,480 | 3,780,800 | 0.15     | 0.0                            | 0.2  | 0.0         | 36.8 | 1.4        | 13.1 | 0.2    | 6.9  | 30.0       | 6.7     | 0.3        | 0.3  |
| Klaskanine   | Chf     | Big Creek      | Klaskanine R, N Fk | 1987  | 203,546 | 1,857  | 3,548,953 | 3,754,356 | 0.01     | 0.0                            | 0.0  | 2.2         | 0.0  | 0.0        | 34.8 | 0.0    | 0.0  | 50.1       | 12.9    | 0.0        | 0.0  |
| Klaskanine   | Chf     | Big Creek      | Klaskanine R, N Fk | 1988  | 209,187 | 3,805  | 3,818,255 | 4,031,047 | 0.09     | 0.0                            | 0.0  | 3.2         | 48.7 | 9.7        | 11.2 | 0.0    | 4.8  | 10.4       | 12.1    | 0.0        | 0.0  |
| Average      |         |                |                    |       | 202,463 | 5,308  | 3,640,896 | 3,848,868 | 0.08     | 0.0                            | 0.1  | 1.8         | 29.2 | 3.7        | 19.7 | 0.1    | 4.6  | 30.2       | 10.6    | 0.1        | 0.1  |
|              |         |                |                    |       |         |        |           |           |          |                                |      |             |      |            |      |        |      |            |         |            |      |
| S F Klask Pd | Chf     | Rogue R        | Klaskanine R, S Fk | 1984  | 49,936  | 884    | 31,057    | 81,857    | 7.49     | 0.0                            | 0.1  | 0.1         | 2.2  | 5.8        | 2.8  | 1.5    | 45.3 | 26.0       | 3.5     | 0.4        | 12.2 |
| S F Klask Pd | Chf     | Rogue R        | Klaskanine R, S Fk | 1985  | 30,089  | 2,848  | 218,545   | 251,462   | 0.81     | 0.0                            | 0.0  | 0.0         | 2.4  | 0.0        | 0.8  | 4.6    | 55.2 | 30.8       | 3.3     | 1.4        | 1.6  |
| S F Klask Pd | Chf     | Rogue R        | Klaskanine R, S Fk | 1986  | 2,760   | 20     | 17,220    | 20,000    | 0.36     | 0.0                            | 0.0  | 0.0         | 0.0  | 0.0        | 0.0  | 0.0    | 60.0 | 30.0       | 10.0    | 0.0        | 0.0  |
| S F Klask Pd | Chf     | Rogue R        | Klaskanine R, S Fk | 1987  | 26,481  | 161    | 53,128    | 79,770    | 3.07     | 0.0                            | 0.0  | 0.0         | 1.5  | 8.4        | 3.7  | 3.0    | 46.6 | 27.5       | 4.7     | 1.4        | 3.5  |
| Average      |         |                |                    |       | 27,312  | 973    | 79,988    | 108,272   | 2.93     | 0.0                            | 0.0  | 0.0         | 1.5  | 3.6        | 1.8  | 2.3    | 51.8 | 28.6       | 5.4     | 0.8        | 4.3  |
|              |         |                |                    |       |         |        |           |           |          |                                |      |             |      |            |      |        |      |            |         |            |      |
| S F Klask Pd | Chf     | Tanner Cr      | Klaskanine R, S Fk | 1984  | 101,415 | 1,038  | 2,892,321 | 2,994,772 | 1.67     | 0.1                            | 0.4  | 4.1         | 35.5 | 5.7        | 10.4 | 0.3    | 5.5  | 32.4       | 5.7     | 0.0        | 0.0  |
| S F Klask Pd | Chf     | Tanner Cr      | Klaskanine R, S Fk | 1985  | 99,043  | 5,583  | 2,904,840 | 3,009,486 | 0.12     | 0.0                            | 0.0  | 0.0         | 54.4 | 4.0        | 3.5  | 0.0    | 3.4  | 16.9       | 17.8    | 0.0        | 0.0  |
| S F Klask Pd | Chf     | Big Creek      | Klaskanine R, S Fk | 1986  | 135,975 | 6,576  | 1,199,910 | 1,342,461 | 0.08     | 0.0                            | 0.0  | 12.2        | 26.1 | 3.8        | 0.8  | 0.0    | 7.5  | 26.4       | 21.4    | 0.0        | 0.0  |
| S F Klask Pd | Chf     | Big Creek      | Klaskanine R, S Fk | 1987  | 139,660 | 11,755 | 2,928,035 | 3,079,450 | 0.04     | 0.0                            | 0.0  | 0.0         | 29.6 | 0.0        | 11.1 | 0.0    | 13.5 | 40.6       | 5.1     | 0.0        | 0.0  |
| Average      |         |                |                    |       | 119,023 | 6,238  | 2,481,277 | 2,606,537 | 0.48     | 0.0                            | 0.1  | 4.1         | 36.9 | 3.4        | 6.5  | 0.1    | 7.5  | 29.1       | 12.5    | 0.0        | 0.0  |
|              |         |                |                    |       |         |        |           |           |          |                                |      |             |      |            |      |        |      |            |         |            |      |
| Stayton Pond | Chf     | M Willamette R | Willamette R       | 1984  | 180,562 | 13,643 | 4,340,089 | 4,534,194 | 3.42     | 0.0                            | 0.1  | 3.0         | 30.7 | 7.0        | 10.5 | 0.5    | 5.4  | 18.0       | 24.1    | 0.2        | 0.5  |
| Stayton Pond | Chf     | Tanner Cr      | Willamette R       | 1985  | 183,215 | 12,040 | 4,738,291 | 4,933,546 | 0.19     | 0.0                            | 0.0  | 0.0         | 27.0 | 7.5        | 18.1 | 0.0    | 5.3  | 8.1        | 34.1    | 0.0        | 0.0  |
| Stayton Pond | Chf     | Tanner Cr      | Willamette R       | 1986  | 196,844 | 1,733  | 5,570,245 | 5,768,922 | 0.09     | 0.0                            | 0.0  | 0.0         | 11.8 | 3.6        | 23.7 | 0.0    | 13.7 | 0.0        | 48.1    | 1.2        | 0.0  |
| Stayton Pond | Chf     | Tanner Cr      | Willamette R       | 1987  | 193,340 | 5,149  | 4,859,768 | 5,058,277 | 0.13     | 0.0                            | 0.0  | 1.1         | 28.0 | 6.0        | 10.9 | 1.7    | 3.6  | 0.0        | 48.7    | 0.0        | 0.0  |
| Stayton Pond | Chf     | Tanner Cr      | Willamette R       | 1988  | 173,719 | 2,777  | 4,418,636 | 4,595,132 | 0.16     | 0.0                            | 0.0  | 0.0         | 18.1 | 10.8       | 8.9  | 3.3    | 3.2  | 1.7        | 54.0    | 0.0        | 0.0  |
| Average      |         |                |                    |       | 185,556 | 7,048  | 4,785,410 | 4,978,014 | 0.80     | 0.0                            | 0.0  | 0.8         | 23.1 | 7.0        | 14.4 | 1.1    | 6.2  | 5.6        | 41.4    | 0.3        | 0.1  |

Appendix Table 1. Average Percent Recovery (by Fishery) for the Last 5 Completed Brood years

(Chinook 1984 to 1986 broods; Coho 1986 to 1990 broods; Steelhead 1985 to 1989 broods)

Data downloaded October 1994 (through Preliminary 1993 returns)

| Spring Chinook |         |                 |                 |       | Number  |        |           |           |      |        | Percent Recovery for All Areas |             |      |            |     |        |     |            |            |            |     |  |
|----------------|---------|-----------------|-----------------|-------|---------|--------|-----------|-----------|------|--------|--------------------------------|-------------|------|------------|-----|--------|-----|------------|------------|------------|-----|--|
|                |         |                 |                 |       | AD Clip |        |           | Total     | %    | Alaska |                                | British Col |      | Washington |     | Oregon |     | Freshwater |            | California |     |  |
| Hatchery       | Species | Stock           | Release Site    | Brood | Tagged  | Only   | Untagged  | Released  | Surv | Spt    | Com                            | Spt         | Com  | Spt        | Com | Spt    | Com | Gillnet    | Freshwater | Spt        | Com |  |
| Bonneville     | Chs     | Carson          | Hood R, W Fk    | 1986  | 50,744  | 1,015  | 98,180    | 149,939   | 0.33 | 0.0    | 0.0                            | 0.0         | 0.0  | 0.0        | 0.0 | 0.0    | 2.4 | 5.3        | 92.3       | 0.0        | 0.0 |  |
| Bonneville     | Chs     | Lookingglass Cr | Hood R, W Fk    | 1987  | 52,248  | 454    | 81,615    | 134,317   | 0.07 | 0.0    | 0.0                            | 0.0         | 0.0  | 0.0        | 0.0 | 0.0    | 0.0 | 0.0        | 100.0      | 0.0        | 0.0 |  |
| Bonneville     | Chs     | Lookingglass Cr | Hood R, W Fk    | 1988  | 52,891  | 613    | 139,689   | 193,193   | 0.18 | 0.0    | 0.0                            | 0.0         | 0.0  | 0.0        | 0.0 | 0.0    | 0.0 | 3.1        | 96.9       | 0.0        | 0.0 |  |
| Average        |         |                 |                 |       | 51,961  | 694    | 108,495   | 159,150   | 0.19 | 0.0    | 0.0                            | 0.0         | 0.0  | 0.0        | 0.0 | 0.0    | 0.8 | 2.8        | 96.4       | 0.0        | 0.0 |  |
|                |         |                 |                 |       |         |        |           |           |      |        |                                |             |      |            |     |        |     |            |            |            |     |  |
| Bonneville     | Chs     | Carson          | Lookingglass Cr | 1984  | 145,231 | 9,038  | 248       | 154,517   | 0.08 | 0.0    | 0.0                            | 0.0         | 0.0  | 0.0        | 0.0 | 0.0    | 1.2 | 98.8       | 0.0        | 0.0        |     |  |
|                |         |                 |                 |       |         |        |           |           |      |        |                                |             |      |            |     |        |     |            |            |            |     |  |
| Bonneville     | Chs     | Carson          | Umatilla R      | 1986  | 156,649 | 4,100  | 47,360    | 208,109   | 0.31 | 0.0    | 0.0                            | 0.0         | 0.0  | 0.0        | 0.0 | 0.0    | 3.2 | 96.8       | 0.0        | 0.0        |     |  |
| Bonneville     | Chs     | Lookingglass Cr | Umatilla R      | 1987  | 233,709 | 1,465  | 2,705     | 237,879   | 0.15 | 0.0    | 0.0                            | 0.0         | 0.0  | 0.2        | 0.0 | 0.0    | 0.0 | 99.8       | 0.0        | 0.0        |     |  |
| Bonneville     | Chs     | Lookingglass Cr | Umatilla R      | 1988  | 320,377 | 2,402  | 73,586    | 396,375   | 0.30 | 0.0    | 0.0                            | 0.0         | 0.0  | 0.0        | 0.1 | 0.0    | 0.0 | 6.7        | 93.2       | 0.0        | 0.0 |  |
| Average        |         |                 |                 |       | 236,912 | 2,656  | 41,220    | 280,788   | 0.25 | 0.0    | 0.0                            | 0.0         | 0.0  | 0.1        | 0.0 | 0.0    | 0.0 | 3.3        | 96.6       | 0.0        | 0.0 |  |
|                |         |                 |                 |       |         |        |           |           |      |        |                                |             |      |            |     |        |     |            |            |            |     |  |
| Clackamas      | Chs     | Clackamas R E   | Clackamas R     | 1984  | 57,522  | 3,284  | 388,520   | 449,326   | 0.28 | 0.0    | 5.5                            | 2.4         | 10.1 | 0.0        | 0.0 | 0.0    | 0.0 | 2.6        | 79.4       | 0.0        | 0.0 |  |
| Clackamas      | Chs     | Clackamas R E   | Clackamas R     | 1985  | 78,409  | 4,789  | 694,890   | 778,088   | 0.07 | 0.0    | 22.9                           | 0.0         | 1.2  | 0.0        | 0.0 | 0.0    | 0.0 | 15.9       | 60.0       | 0.0        | 0.0 |  |
| Clackamas      | Chs     | Clackamas R E   | Clackamas R     | 1986  | 69,409  | 2,498  | 0         | 71,907    | 0.51 | 0.0    | 8.5                            | 0.3         | 2.8  | 0.0        | 0.8 | 0.0    | 0.0 | 13.3       | 74.6       | 0.0        | 0.0 |  |
| Clackamas      | Chs     | Clackamas R E   | Clackamas R     | 1987  | 61,871  | 1,547  | 1,065,524 | 1,128,942 | 0.66 | 0.0    | 10.8                           | 0.0         | 2.3  | 0.0        | 0.0 | 0.0    | 0.0 | 2.9        | 83.9       | 0.0        | 0.0 |  |
| Clackamas      | Chs     | Clackamas R E   | Clackamas R     | 1988  | 91,832  | 1,739  | 1,190,682 | 1,284,253 | 1.17 | 0.3    | 10.6                           | 1.8         | 7.2  | 2.6        | 7.8 | 1.9    | 0.3 | 0.3        | 67.3       | 0.0        | 0.0 |  |
| Average        |         |                 |                 |       | 71,809  | 2,771  | 667,923   | 742,503   | 0.56 | 0.1    | 11.7                           | 0.9         | 4.7  | 0.5        | 1.7 | 0.4    | 0.1 | 7.0        | 73.0       | 0.0        | 0.0 |  |
|                |         |                 |                 |       |         |        |           |           |      |        |                                |             |      |            |     |        |     |            |            |            |     |  |
| Clackamas      | Chs     | S Santiam R     | Clackamas R     | 1986  | 15,553  | 285    | 0         | 15,838    | 2.30 | 0.0    | 10.9                           | 0.0         | 4.8  | 1.7        | 0.0 | 0.0    | 0.0 | 14.0       | 66.6       | 0.0        | 0.0 |  |
| Clackamas      | Chs     | M Willamette R  | Clackamas R     | 1987  | 15,417  | 632    | 287,904   | 303,953   | 1.01 | 0.6    | 10.9                           | 0.0         | 2.6  | 0.0        | 0.0 | 0.0    | 0.0 | 5.8        | 80.1       | 0.0        | 0.0 |  |
| Average        |         |                 |                 |       | 15,485  | 459    | 143,952   | 159,896   | 1.66 | 0.3    | 10.9                           | 0.0         | 3.7  | 0.9        | 0.0 | 0.0    | 0.0 | 9.9        | 74.4       | 0.0        | 0.0 |  |
|                |         |                 |                 |       |         |        |           |           |      |        |                                |             |      |            |     |        |     |            |            |            |     |  |
| Lookingglass   | Chs     | Carson          | Lookingglass Cr | 1984  | 351,859 | 10,656 | 352,845   | 715,360   | 0.05 | 0.2    | 0.5                            | 0.0         | 7.4  | 0.0        | 0.0 | 0.0    | 0.0 | 6.6        | 85.3       | 0.0        | 0.0 |  |
| Lookingglass   | Chs     | Carson          | Big Canyon Cr   | 1985  | 78,857  | 1,717  | 3,720     | 84,294    | 0.10 | 0.0    | 0.0                            | 0.0         | 0.0  | 0.0        | 0.0 | 0.0    | 0.0 | 3.6        | 96.4       | 0.0        | 0.0 |  |
| Average        |         |                 |                 |       | 215,358 | 6,187  | 178,283   | 399,827   | 0.08 | 0.1    | 0.3                            | 0.0         | 3.7  | 0.0        | 0.0 | 0.0    | 0.0 | 5.1        | 90.9       | 0.0        | 0.0 |  |
|                |         |                 |                 |       |         |        |           |           |      |        |                                |             |      |            |     |        |     |            |            |            |     |  |
| Lookingglass   | Chs     | Imnaha R        | Imnaha R        | 1984  | 34,563  | 441    | 280       | 35,284    | 0.23 | 0.0    | 0.0                            | 0.0         | 0.0  | 0.0        | 0.0 | 0.0    | 0.0 | 35.0       | 85.0       | 0.0        | 0.0 |  |
| Lookingglass   | Chs     | Imnaha R        | Lookingglass Cr | 1985  | 105,354 | 1,708  | 16,471    | 123,533   | 0.14 | 0.0    | 0.0                            | 0.0         | 0.0  | 0.0        | 0.0 | 0.0    | 0.0 | 27.4       | 72.6       | 0.0        | 0.0 |  |
| Lookingglass   | Chs     | Imnaha R        | Imnaha R        | 1986  | 186,360 | 11,331 | 1,825     | 199,506   | 0.17 | 0.0    | 0.0                            | 0.0         | 0.0  | 0.0        | 0.2 | 0.0    | 0.0 | 1.5        | 98.3       | 0.0        | 0.0 |  |
| Lookingglass   | Chs     | Imnaha R        | Imnaha R        | 1987  | 134,591 | 7,447  | 282       | 142,320   | 0.12 | 0.0    | 0.0                            | 0.0         | 0.0  | 0.0        | 0.0 | 0.0    | 0.0 | 0.0        | 100.0      | 0.0        | 0.0 |  |
| Lookingglass   | Chs     | Imnaha R        | Imnaha R        | 1988  | 226,268 | 2,183  | 21,344    | 249,795   | 0.37 | 0.0    | 0.0                            | 0.0         | 0.0  | 0.2        | 1.0 | 0.0    | 0.0 | 0.3        | 98.6       | 0.0        | 0.0 |  |
| Average        |         |                 |                 |       | 137,425 | 4,622  | 8,036     | 150,084   | 0.21 | 0.0    | 0.0                            | 0.0         | 0.0  | 0.0        | 0.2 | 0.0    | 0.0 | 12.8       | 86.9       | 0.0        | 0.0 |  |

Appendix Table 1 Average Percent Recovery (by Fishery) for the Last 5 Completed Brood years

(Chinook 1984 to 1988 broods; Coho 1986 to 1990 broods; Steelhead 1985 to 1989 broods)

Data downloaded October 1994 (through Preliminary 1993 returns)

|                |         |                 |                  |       |         |       |          |          |      | Percent Recovery for All Areas |      |             |      |            |     |        |      |            |            |            |     |
|----------------|---------|-----------------|------------------|-------|---------|-------|----------|----------|------|--------------------------------|------|-------------|------|------------|-----|--------|------|------------|------------|------------|-----|
|                |         |                 |                  |       | Number  |       |          |          | %    |                                |      |             |      |            |     |        |      |            |            |            |     |
|                |         |                 |                  |       | AD Clip |       |          | Total    |      | Alaska                         |      | British Col |      | Washington |     | Oregon |      | Freshwater |            | California |     |
| Hatchery       | Species | Stock           | Release Site     | Brood | Tagged  | Only  | Untagged | Released | Surv | Spt                            | Com  | Spt         | Com  | Spt        | Com | Spt    | Com  | Gillnet    | Freshwater | Spt        | Com |
| Spring Chinook |         |                 |                  |       |         |       |          |          |      |                                |      |             |      |            |     |        |      |            |            |            |     |
| Lookingglass   | Chs     | Lookingglass Cr | Lookingglass Cr  | 1984  | 41,973  | 107   | 5,628    | 47,708   | 0.11 | 0.0                            | 0.0  | 0.0         | 0.0  | 0.0        | 0.0 | 0.0    | 0.0  | 0.0        | 100.0      | 0.0        | 0.0 |
| Lookingglass   | Chs     | Lookingglass Cr | Lookingglass Cr  | 1985  | 401,705 | 7,830 | 172,557  | 582,092  | 0.06 | 0.0                            | 0.0  | 0.0         | 0.0  | 0.0        | 0.0 | 1.7    | 7.6  | 90.7       | 0.0        | 0.0        |     |
| Lookingglass   | Chs     | Lookingglass Cr | Lookingglass Cr  | 1986  | 86,213  | 870   | 13,835   | 100,918  | 0.00 | 0.0                            | 0.0  | 0.0         | 0.0  | 0.0        | 0.0 | 0.0    | 0.0  | 100.0      | 0.0        | 0.0        |     |
| Average        |         |                 |                  |       | 176,630 | 2,936 | 64,007   | 243,573  | 0.06 | 0.0                            | 0.0  | 0.0         | 0.0  | 0.0        | 0.0 | 0.6    | 2.5  | 96.9       | 0.0        | 0.0        |     |
| Lookingglass   | Chs     | Rapid R (Idaho) | Lookingglass Cr  | 1985  | 99,742  | 494   | 292,880  | 393,116  | 0.04 | 0.0                            | 0.0  | 0.0         | 0.0  | 0.0        | 0.0 | 0.0    | 0.0  | 100.0      | 0.0        | 0.0        |     |
| Lookingglass   | Chs     | Rapid R (Idaho) | Lookingglass Cr  | 1986  | 325,705 | 9,127 | 3,327    | 336,159  | 0.12 | 0.0                            | 0.0  | 0.0         | 0.0  | 0.0        | 0.0 | 0.0    | 2.5  | 97.3       | 0.2        | 0.0        |     |
| Lookingglass   | Chs     | Rapid R (Idaho) | Lookingglass Cr  | 1987  | 342,199 | 3,937 | 13,538   | 359,674  | 0.04 | 0.0                            | 0.0  | 0.0         | 0.0  | 0.0        | 0.0 | 11.1   | 0.0  | 88.9       | 0.0        | 0.0        |     |
| Lookingglass   | Chs     | Rapid R (Idaho) | Lookingglass Cr  | 1988  | 171,234 | 4,139 | 444,266  | 619,639  | 0.35 | 0.0                            | 0.0  | 0.0         | 0.0  | 0.0        | 0.0 | 0.0    | 0.0  | 100.0      | 0.0        | 0.0        |     |
| Average        |         |                 |                  |       | 234,720 | 4,424 | 186,503  | 427,647  | 0.14 | 0.0                            | 0.0  | 0.0         | 0.0  | 0.0        | 0.0 | 2.8    | 0.0  | 0.6        | 96.6       | 0.1        | 0.0 |
| Imigon         | Chs     | Rapid R (Idaho) | Lookingglass Cr  | 1986  | 122,906 | 1,770 | 49,296   | 173,974  | 0.00 | 0.0                            | 0.0  | 0.0         | 0.0  | 0.0        | 0.0 | 0.0    | 0.0  | 0.0        | 0.0        | 0.0        |     |
| Imigon         | Chs     | Rapid R (Idaho) | Lookingglass Cr  | 1987  | 125,924 | 2,869 | 12,289   | 141,062  | 0.00 | 0.0                            | 0.0  | 0.0         | 0.0  | 0.0        | 0.0 | 0.0    | 0.0  | 100.0      | 0.0        | 0.0        |     |
| Imigon         | Chs     | Rapid R (Idaho) | Lookingglass Cr  | 1988  | 123,168 | 3,427 | 105      | 126,700  | 0.00 | 0.0                            | 0.0  | 0.0         | 0.0  | 0.0        | 0.0 | 0.0    | 0.0  | 0.0        | 0.0        | 0.0        |     |
| Average        |         |                 |                  |       | 123,999 | 2,689 | 20,564   | 147,252  | 0.00 | 0.0                            | 0.0  | 0.0         | 0.0  | 0.0        | 0.0 | 0.0    | 0.0  | 0.0        | 100.0      | 0.0        | 0.0 |
| Marion Forks   | Chs     | N Santiam R     | Santiam R & N Fk | 1984  | 31,494  | 545   | 161,166  | 193,205  | 1.33 | 1.0                            | 18.8 | 0.0         | 16.2 | 0.0        | 1.8 | 0.0    | 0.0  | 18.5       | 41.8       | 0.0        | 0.0 |
| Marion Forks   | Chs     | N Santiam R     | Santiam R & N Fk | 1985  | 31,381  | 1,105 | 58,980   | 91,446   | 0.91 | 0.4                            | 0.0  | 0.0         | 4.2  | 0.9        | 3.8 | 0.0    | 0.0  | 18.8       | 68.1       | 0.0        | 3.9 |
| Marion Forks   | Chs     | N Santiam R     | Santiam R & N Fk | 1986  | 26,055  | 4,260 | 159      | 30,474   | 1.82 | 0.2                            | 10.7 | 0.8         | 7.0  | 0.8        | 1.5 | 0.0    | 0.0  | 12.0       | 67.0       | 0.0        | 0.0 |
| Marion Forks   | Chs     | N Santiam R     | Santiam R & N Fk | 1987  | 30,076  | 182   | 0        | 30,258   | 1.50 | 0.2                            | 12.8 | 0.0         | 2.7  | 0.0        | 1.8 | 0.0    | 0.0  | 6.0        | 76.6       | 0.0        | 0.0 |
| Marion Forks   | Chs     | N Santiam R     | Santiam R & N Fk | 1988  | 31,918  | 669   | 417,764  | 450,351  | 1.17 | 0.0                            | 3.9  | 1.0         | 3.4  | 0.0        | 4.7 | 0.0    | 0.2  | 0.6        | 86.2       | 0.0        | 0.0 |
| Average        |         |                 |                  |       | 30,185  | 1,352 | 127,610  | 159,147  | 1.35 | 0.4                            | 9.2  | 0.4         | 7.1  | 0.3        | 2.7 | 0.0    | 0.0  | 11.2       | 67.9       | 0.0        | 0.8 |
| Marion Forks   | Chs     | S Santiam R     | Santiam R & N Fk | 1984  | 63,288  | 723   | 50,783   | 114,794  | 1.10 | 0.1                            | 6.4  | 0.6         | 35.6 | 0.5        | 3.3 | 0.0    | 0.0  | 8.0        | 45.1       | 0.3        | 0.0 |
| Marion Forks   | Chs     | N Santiam R     | Santiam R, S Fk  | 1985  | 32,173  | 941   | 59,117   | 92,231   | 0.33 | 0.0                            | 3.8  | 0.0         | 0.0  | 0.0        | 0.0 | 2.6    | 27.6 | 66.0       | 0.0        | 0.0        |     |
| Marion Forks   | Chs     | N Santiam R     | Santiam R, S Fk  | 1986  | 25,600  | 5,581 | 0        | 31,181   | 1.93 | 0.0                            | 9.5  | 0.8         | 3.9  | 0.0        | 0.2 | 0.0    | 0.0  | 9.5        | 76.1       | 0.0        | 0.0 |
| Marion Forks   | Chs     | N Santiam R     | Santiam R, S Fk  | 1987  | 29,305  | 446   | 0        | 29,751   | 1.54 | 0.0                            | 9.6  | 0.0         | 3.6  | 0.4        | 4.4 | 0.0    | 0.0  | 5.1        | 76.9       | 0.0        | 0.0 |
| Average        |         |                 |                  |       | 29,026  | 2,323 | 19,706   | 51,054   | 1.27 | 0.0                            | 7.6  | 0.3         | 2.5  | 0.1        | 1.5 | 0.0    | 0.9  | 14.1       | 73.0       | 0.0        | 0.0 |

Appendix Table 1. Average Percent Recovery (by Fishery) for the Last 5 Completed Brood years

(Chinook 1984 to 1988 broods; Coho 1986 to 1990 broods; Steelhead 1985 to 1989 broods)

Data downloaded October 1994 (through Preliminary 1993 returns)

| Data downloaded October 1994 (through Preliminary 1993 returns) |         |                |                    |       |         |       |           |           |                                | Percent Recovery for All Areas |      |             |      |            |     |        |            |         |            |            |     |
|---|---------|----------------|--------------------|-------|---------|-------|-----------|-----------|--------------------------------|--------------------------------|------|-------------|------|------------|-----|--------|------------|---------|------------|------------|-----|
| Spring Chinook  |         |                |                    |       | Number  |       |           | %         | Percent Recovery for All Areas |                                |      |             |      |            |     |        |            |         |            |            |     |
|   |         |                |                    |       | AD Clip |       | Total     |           | Freshwater                     |                                |      |             |      |            |     |        | California |         |            |            |     |
| Hatchery  | Species | Stock          | Release Site       | Brood | Tagged  | Only  | Untagged  | Released  | Surv                           | Alaska                         |      | British Col |      | Washington |     | Oregon |            | Other   |            | California |     |
|   |         |                |                    |       |         |       |           |           |                                | Spt                            | Com  | Spt         | Com  | Spt        | Com | Spt    | Com        | Gillnet | Freshwater | Spt        | Com |
| McKenzie  | Chs     | McKenzie R     | McKenzie R         | 1984  | 56,906  | 5,169 | 241       | 62,316    | 0.99                           | 0.2                            | 12.0 | 0.0         | 10.3 | 0.0        | 1.8 | 0.0    | 0.0        | 9.5     | 66.2       | 0.0        | 0.0 |
| McKenzie  | Chs     | McKenzie R     | McKenzie R         | 1985  | 58,030  | 4,244 | 330,223   | 392,497   | 1.11                           | 0.2                            | 2.8  | 0.0         | 7.6  | 0.3        | 1.0 | 0.0    | 0.0        | 26.6    | 61.7       | 0.0        | 0.0 |
| McKenzie  | Chs     | McKenzie R     | McKenzie R         | 1986  | 58,352  | 3,098 | 0         | 61,450    | 1.56                           | 0.1                            | 11.6 | 0.3         | 3.0  | 0.0        | 0.5 | 0.0    | 0.0        | 14.1    | 70.4       | 0.0        | 0.0 |
| McKenzie  | Chs     | McKenzie R     | McKenzie R         | 1987  | 61,084  | 1,597 | 658,487   | 721,168   | 1.13                           | 0.3                            | 6.6  | 0.0         | 5.4  | 0.0        | 0.2 | 0.1    | 0.0        | 9.1     | 78.3       | 0.0        | 0.0 |
| McKenzie  | Chs     | McKenzie R     | McKenzie R         | 1988  | 61,158  | 1,610 | 182,344   | 245,112   | 0.61                           | 0.1                            | 21.4 | 0.1         | 4.3  | 1.8        | 1.9 | 0.0    | 0.0        | 0.2     | 69.1       | 0.0        | 1.1 |
| Average   |         |                |                    |       | 59,106  | 3,144 | 234,259   | 296,509   | 1.08                           | 0.2                            | 10.8 | 0.1         | 6.1  | 0.4        | 1.1 | 0.0    | 0.0        | 11.9    | 69.1       | 0.0        | 0.2 |
|   |         |                |                    |       |         |       |           |           |                                |                                |      |             |      |            |     |        |            |         |            |            |     |
| Round Butte   | Chs     | Deschutes R    | Deschutes R        | 1984  | 125,615 | 2,835 | 433       | 128,883   | 1.40                           | 0.0                            | 0.0  | 0.0         | 0.6  | 0.0        | 0.0 | 0.0    | 0.2        | 1.4     | 97.8       | 0.0        | 0.0 |
| Round Butte   | Chs     | Deschutes R    | Deschutes R        | 1985  | 112,896 | 4,267 | 148,697   | 265,662   | 2.06                           | 0.0                            | 0.0  | 0.0         | 0.0  | 0.0        | 0.0 | 0.0    | 0.4        | 1.1     | 98.6       | 0.0        | 0.0 |
| Round Butte   | Chs     | Deschutes R    | Deschutes R        | 1986  | 109,809 | 5,533 | 150       | 115,492   | 2.06                           | 0.0                            | 0.0  | 0.0         | 0.1  | 0.0        | 0.1 | 0.0    | 0.0        | 0.2     | 99.6       | 0.0        | 0.0 |
| Round Butte   | Chs     | Deschutes R    | Deschutes R        | 1987  | 112,843 | 6,210 | 0         | 119,053   | 1.43                           | 0.0                            | 0.0  | 0.0         | 0.5  | 0.0        | 0.9 | 0.0    | 0.0        | 0.6     | 98.1       | 0.0        | 0.0 |
| Round Butte   | Chs     | Deschutes R    | Deschutes R        | 1988  | 122,245 | 2,355 | 134,847   | 259,447   | 1.72                           | 0.0                            | 0.0  | 0.0         | 0.0  | 0.0        | 0.0 | 0.0    | 0.0        | 0.4     | 99.6       | 0.0        | 0.0 |
| Average   |         |                |                    |       | 116,682 | 4,240 | 56,825    | 177,747   | 1.74                           | 0.0                            | 0.0  | 0.0         | 0.2  | 0.0        | 0.2 | 0.0    | 0.1        | 0.7     | 98.7       | 0.0        | 0.0 |
|   |         |                |                    |       |         |       |           |           |                                |                                |      |             |      |            |     |        |            |         |            |            |     |
| South Santiam   | Chs     | S Santiam R    | Santiam R, S Fk    | 1984  | 54,566  | 3,123 | 116,750   | 174,439   | 0.80                           | 0.1                            | 9.3  | 1.3         | 13.2 | 0.0        | 2.0 | 0.0    | 0.0        | 15.2    | 59.0       | 0.0        | 0.0 |
| South Santiam   | Chs     | S Santiam R    | Santiam R, S Fk    | 1985  | 25,956  | 106   | 119,373   | 145,435   | 1.38                           | 0.0                            | 8.2  | 3.8         | 8.0  | 0.0        | 0.6 | 0.6    | 0.0        | 14.8    | 63.9       | 0.0        | 0.0 |
| South Santiam   | Chs     | S Santiam R    | Santiam R, S Fk    | 1987  | 24,640  | 357   | 484       | 25,481    | 1.27                           | 0.0                            | 10.5 | 0.0         | 6.1  | 0.3        | 0.6 | 0.0    | 1.0        | 9.9     | 71.6       | 0.0        | 0.0 |
| Dexter Ponds  | Chs     | S Santiam R    | Santiam R, S Fk    | 1988  | 64,018  | 1,367 | 705,550   | 770,935   | 0.20                           | 0.0                            | 9.9  | 1.3         | 12.0 | 0.0        | 0.0 | 0.0    | 0.0        | 0.0     | 76.8       | 0.0        | 0.0 |
| Average   |         |                |                    |       | 42,295  | 1,238 | 235,539   | 279,073   | 0.91                           | 0.0                            | 9.5  | 1.6         | 9.8  | 0.1        | 0.8 | 0.2    | 0.3        | 10.0    | 67.8       | 0.0        | 0.0 |
|   |         |                |                    |       |         |       |           |           |                                |                                |      |             |      |            |     |        |            |         |            |            |     |
| South Santiam   | Chs     | S Santiam R    | Willamette R       | 1986  | 23,728  | 1,647 | 0         | 25,375    | 1.17                           | 0.0                            | 9.3  | 0.0         | 4.9  | 0.0        | 2.0 | 0.0    | 1.2        | 19.3    | 63.4       | 0.0        | 0.0 |
| South Santiam   | Chs     | S Santiam R    | Willamette R       | 1987  | 25,178  | 203   | 86,312    | 111,693   | 1.00                           | 0.0                            | 19.1 | 0.0         | 6.0  | 0.0        | 0.0 | 0.0    | 0.8        | 15.5    | 56.7       | 0.0        | 0.0 |
| Average   |         |                |                    |       | 24,453  | 925   | 43,156    | 68,534    | 1.09                           | 0.0                            | 14.2 | 0.0         | 5.5  | 0.0        | 1.0 | 0.0    | 1.0        | 17.4    | 61.1       | 0.0        | 0.0 |
|   |         |                |                    |       |         |       |           |           |                                |                                |      |             |      |            |     |        |            |         |            |            |     |
| S F Klask Pd  | Chs     | M Willamette R | Klaskanine R, S Fk | 1988  | 28,050  | 710   | 87,319    | 116,079   | 0.00                           | 0.0                            | 0.0  | 0.0         | 0.0  | 0.0        | 0.0 | 0.0    | 0.0        | 0.0     | 100.0      | 0.0        | 0.0 |
|   |         |                |                    |       |         |       |           |           |                                |                                |      |             |      |            |     |        |            |         |            |            |     |
| S F Klask Pd  | Chs     | M Willamette R | Youngs R           | 1988  | 52,584  | 471   | 110,458   | 163,513   | 0.43                           | 0.0                            | 7.7  | 0.0         | 0.3  | 0.0        | 0.2 | 0.0    | 0.0        | 62.1    | 29.7       | 0.0        | 0.0 |
|   |         |                |                    |       |         |       |           |           |                                |                                |      |             |      |            |     |        |            |         |            |            |     |
| Willamette  | Chs     | M Willamette R | Willamette R, M Fk | 1984  | 105,496 | 3,064 | 636,677   | 745,457   | 0.97                           | 0.0                            | 5.3  | 0.0         | 6.7  | 0.1*       | 1.8 | 0.0    | 0.1        | 27.8    | 58.3       | 0.0        | 0.0 |
| Willamette  | Chs     | M Willamette R | Willamette R, M Fk | 1985  | 165,003 | 4,707 | 1,137,547 | 1,307,257 | 2.08                           | 0.1                            | 4.7  | 0.0         | 3.4  | 0.2        | 0.1 | 0.4    | 0.0        | 18.3    | 72.9       | 0.0        | 0.0 |
| Willamette  | Chs     | M Willamette R | Willamette R, M Fk | 1986  | 158,918 | 7,682 | 7,970     | 174,570   | 1.23                           | 0.0                            | 5.4  | 0.1         | 3.4  | 0.4        | 1.5 | 0.0    | 0.1        | 7.8     | 80.9       | 0.4        | 0.0 |
| Willamette  | Chs     | M Willamette R | Willamette R, M Fk | 1987  | 180,016 | 2,761 | 887,265   | 1,070,042 | 0.70                           | 0.1                            | 5.6  | 0.4         | 2.3  | 0.2        | 0.2 | 0.0    | 0.1        | 3.4     | 87.9       | 0.0        | 0.0 |
| Willamette  | Chs     | M Willamette R | Willamette R, M Fk | 1988  | 94,094  | 682   | 1,163,420 | 1,258,396 | 1.06                           | 0.0                            | 5.7  | 0.0         | 2.8  | 0.0        | 0.6 | 0.0    | 0.0        | 2.2     | 88.8       | 0.0        | 0.0 |
| Average   |         |                |                    |       | 140,705 | 3,823 | 766,616   | 911,144   | 1.21                           | 0.0                            | 5.3  | 0.1         | 3.7  | 0.2        | 0.6 | 0.1    | 0.1        | 11.9    | 77.8       | 0.1        | 0.0 |
|   |         |                |                    |       |         |       |           |           |                                |                                |      |             |      |            |     |        |            |         |            |            |     |
| Bonneville  | Chsu    | URB            | Tanner Cr          | 1986  | 100,456 | 2,311 | 328,451   | 408,796   | 0.22                           | 0.9                            | 14.9 | 4.6         | 19.3 | 0.0        | 1.6 | 0.0    | 2.0        | 27.1    | 29.5       | 0.0        | 0.0 |

Appendix Table 1 Average Percent Recovery (by Fishery) for the Last 5 Completed Brood years

(Chinook 1984 to 1988 broods; Coho 1986 to 1990 broods; Steelhead 1985 to 1989 broods)

Data downloaded October 1994 (through Preliminary 1993 returns)

|            |         |              |                    |       |         |       |           |           |        |     | Percent Recovery for All Areas |     |            |      |        |      |            |      |            |            |      |
|------------|---------|--------------|--------------------|-------|---------|-------|-----------|-----------|--------|-----|--------------------------------|-----|------------|------|--------|------|------------|------|------------|------------|------|
| Coho       |         |              |                    |       | Number  |       |           |           |        | %   |                                |     |            |      |        |      |            |      |            |            |      |
| Hatchery   | Species | Stock        | Release Site       | Brood | AD Clip |       |           | Total     | Alaska |     | British Col                    |     | Washington |      | Oregon |      | Freshwater |      | California |            |      |
|            |         |              |                    |       | Tagged  | Only  | Untagged  |           |        |     | Spt                            | Com | Spt        | Com  | Spt    | Com  | Spt        | Com  | Gillnet    | Freshwater | Spt  |
| Bonneville | Coho    | Tanner Cr    | Tanner Cr          | 1986  | 78,934  | 0     | 1,805,149 | 1,884,083 | 6.91   | 0.0 | 0.0                            | 0.0 | 2.7        | 10.5 | 1.9    | 12.5 | 20.9       | 20.2 | 29.5       | 1.0        | 0.6  |
| Bonneville | Coho    | Tanner Cr    | Tanner Cr          | 1987  | 83,194  | 1,415 | 1,674,393 | 1,759,002 | 1.65   | 0.0 | 0.0                            | 0.0 | 6.0        | 17.3 | 4.2    | 14.7 | 15.9       | 6.2  | 28.7       | 2.9        | 4.2  |
| Bonneville | Coho    | Tanner Cr    | Tanner Cr          | 1988  | 76,489  | 2,742 | 1,570,942 | 1,650,173 | 3.14   | 0.0 | 0.0                            | 0.0 | 1.7        | 13.9 | 0.6    | 11.8 | 13.1       | 22.3 | 32.3       | 1.8        | 2.6  |
| Bonneville | Coho    | Tanner Cr    | Tanner Cr          | 1989  | 69,363  | 453   | 1,654,569 | 1,724,405 | 2.05   | 0.0 | 0.0                            | 0.0 | 0.9        | 18.4 | 1.2    | 25.4 | 5.9        | 2.3  | 45.9       | 0.1        | 0.0  |
| Bonneville | Coho    | Tanner Cr    | Tanner Cr          | 1990  | 82,442  | 1,236 | 2,092,987 | 2,176,665 | 0.88   | 0.0 | 0.0                            | 0.0 | 1.3        | 13.8 | 1.3    | 14.0 | 0.0        | 7.8  | 56.6       | 5.3        | 0.0  |
| Average    |         |              |                    |       | 78,084  | 1,169 | 1,759,612 | 1,838,866 | 2.93   | 0.0 | 0.0                            | 0.0 | 2.5        | 14.8 | 1.8    | 15.7 | 11.2       | 11.8 | 38.6       | 2.2        | 1.5  |
|            |         |              |                    |       |         |       |           |           |        |     |                                |     |            |      |        |      |            |      |            |            |      |
| Big Creek  | Coho    | Big Creek    | Big Cr             | 1986  | 70,091  | 1,785 | 517,246   | 589,122   | 6.10   | 0.0 | 0.1                            | 0.0 | 2.6        | 8.4  | 1.6    | 17.6 | 22.9       | 21.5 | 21.1       | 2.4        | 1.4  |
| Big Creek  | Coho    | Big Creek    | Big Cr             | 1987  | 100,126 | 1,297 | 484,641   | 586,064   | 2.40   | 0.0 | 0.0                            | 0.0 | 4.4        | 19.3 | 2.3    | 19.4 | 15.4       | 6.3  | 29.6       | 1.8        | 1.4  |
| Big Creek  | Coho    | Big Creek    | Big Cr             | 1988  | 108,636 | 2,100 | 523,697   | 634,433   | 4.21   | 0.0 | 0.0                            | 0.0 | 1.9        | 20.8 | 1.3    | 20.3 | 14.5       | 10.7 | 27.4       | 1.9        | 1.2  |
| Big Creek  | Coho    | Big Creek    | Big Cr             | 1989  | 101,837 | 3,110 | 529,835   | 634,782   | 2.82   | 0.0 | 0.0                            | 0.0 | 0.5        | 11.0 | 0.2    | 31.4 | 12.0       | 5.4  | 38.8       | 0.4        | 0.5  |
| Big Creek  | Coho    | Big Creek    | Big Cr             | 1990  | 53,963  | 600   | 499,342   | 553,925   | 0.21   | 0.0 | 0.0                            | 0.0 | 2.0        | 38.6 | 0.0    | 14.4 | 0.0        | 11.9 | 31.4       | 1.7        | 0.0  |
| Average    |         |              |                    |       | 86,935  | 1,778 | 510,952   | 599,865   | 3.55   | 0.0 | 0.0                            | 0.0 | 2.3        | 19.6 | 1.1    | 20.6 | 13.0       | 11.2 | 29.7       | 1.6        | 0.9  |
|            |         |              |                    |       |         |       |           |           |        |     |                                |     |            |      |        |      |            |      |            |            |      |
| Cascade    | Coho    | Tanner Cr    | Umatilla R         | 1986  | 58,068  | 5,246 | 140,151   | 203,465   | 4.11   | 0.0 | 0.0                            | 0.3 | 4.0        | 12.5 | 4.0    | 15.5 | 25.2       | 18.0 | 16.6       | 2.4        | 1.6  |
| Cascade    | Coho    | Tanner Cr    | Umatilla R         | 1987  | 60,217  | 2,672 | 150,380   | 233,269   | 0.87   | 0.0 | 0.0                            | 0.0 | 1.8        | 11.9 | 6.0    | 18.0 | 16.8       | 5.3  | 20.6       | 7.4        | 11.9 |
| Cascade    | Coho    | Tanner Cr    | Umatilla R         | 1988  | 82,140  | 1,304 | 703,188   | 786,632   | 3.14   | 0.0 | 0.0                            | 0.0 | 1.9        | 16.9 | 1.4    | 15.1 | 13.0       | 25.1 | 18.6       | 4.3        | 3.7  |
| Cascade    | Coho    | Tanner Cr    | Umatilla R         | 1989  | 75,329  | 3,319 | 830,778   | 906,426   | 0.16   | 0.0 | 0.0                            | 0.0 | 0.0        | 22.0 | 0.7    | 27.2 | 3.3        | 16.6 | 30.2       | 0.0        | 0.0  |
| Cascade    | Coho    | Tanner Cr    | Umatilla R         | 1990  | 83,071  | 1,811 | 876,504   | 961,386   | 0.81   | 0.0 | 0.0                            | 0.0 | 1.2        | 14.1 | 2.7    | 12.1 | 0.0        | 26.1 | 37.4       | 6.5        | 0.0  |
| Average    |         |              |                    |       | 75,785  | 2,870 | 540,200   | 618,836   | 1.82   | 0.0 | 0.0                            | 0.1 | 1.8        | 15.5 | 3.0    | 17.6 | 11.7       | 18.2 | 24.7       | 4.1        | 3.4  |
|            |         |              |                    |       |         |       |           |           |        |     |                                |     |            |      |        |      |            |      |            |            |      |
| Cascade    | Coho    | Tanner Cr    | Yakima R           | 1986  | 66,566  | 3,467 | 110,885   | 180,948   | 1.58   | 0.0 | 0.0                            | 0.6 | 6.0        | 17.3 | 2.8    | 17.2 | 31.0       | 18.9 | 2.3        | 3.2        | 0.6  |
| Cascade    | Coho    | Tanner Cr    | Yakima R           | 1987  | 81,518  | 685   | 136,560   | 218,763   | 0.93   | 0.0 | 0.0                            | 0.0 | 2.9        | 22.8 | 8.7    | 24.3 | 13.1       | 7.2  | 8.1        | 6.5        | 6.5  |
| Cascade    | Coho    | Tanner Cr    | Yakima R           | 1988  | 81,531  | 1,304 | 562,655   | 645,490   | 1.99   | 0.0 | 0.0                            | 0.0 | 0.5        | 20.8 | 1.0    | 16.3 | 14.3       | 23.8 | 15.4       | 4.3        | 3.7  |
| Cascade    | Coho    | Tanner Cr    | Yakima R           | 1989  | 77,932  | 1,015 | 611,484   | 690,431   | 0.15   | 0.0 | 0.0                            | 0.0 | 1.6        | 24.6 | 0.0    | 30.8 | 10.3       | 10.4 | 22.3       | 0.0        | 0.0  |
| Cascade    | Coho    | Tanner Cr    | Yakima R           | 1990  | 82,793  | 1,432 | 613,582   | 697,807   | 0.07   | 0.0 | 0.0                            | 0.0 | 0.0        | 23.1 | 9.2    | 43.2 | 0.0        | 15.7 | 4.3        | 4.4        | 0.0  |
| Average    |         |              |                    |       | 78,074  | 1,581 | 407,033   | 486,688   | 0.94   | 0.0 | 0.0                            | 0.1 | 2.2        | 21.7 | 4.3    | 26.4 | 13.7       | 15.2 | 10.6       | 3.7        | 2.2  |
|            |         |              |                    |       |         |       |           |           |        |     |                                |     |            |      |        |      |            |      |            |            |      |
| Klaskanine | Coho    | Klaskanine R | Klaskanine R, N Fk | 1986  | 32,307  | 0     | 807,451   | 839,758   | 4.38   | 0.0 | 0.0                            | 0.5 | 6.1        | 9.6  | 0.0    | 12.8 | 24.2       | 32.1 | 7.3        | 4.7        | 2.8  |
| Klaskanine | Coho    | Klaskanine R | Klaskanine R, N Fk | 1987  | 31,361  | 93    | 1,062,396 | 1,093,670 | 2.54   | 0.0 | 0.0                            | 0.0 | 3.3        | 11.6 | 1.8    | 20.2 | 12.5       | 31.9 | 5.0        | 6.0        | 7.9  |
| Klaskanine | Coho    | Klaskanine R | Klaskanine R, N Fk | 1988  | 32,081  | 169   | 1,362,297 | 1,394,557 | 4.80   | 0.0 | 0.0                            | 0.1 | 1.9        | 14.3 | 2.0    | 12.8 | 10.8       | 34.3 | 14.9       | 5.2        | 3.7  |
| Klaskanine | Coho    | Klaskanine R | Klaskanine R, N Fk | 1989  | 30,159  | 200   | 1,228,536 | 1,258,897 | 1.57   | 0.0 | 0.0                            | 0.0 | 2.2        | 8.5  | 0.9    | 28.8 | 8.1        | 27.9 | 21.6       | 2.0        | 0.0  |
| Klaskanine | Coho    | Klaskanine R | Klaskanine R, N Fk | 1990  | 31,141  | 66    | 960,251   | 1,021,458 | 0.37   | 0.0 | 0.0                            | 0.0 | 0.0        | 26.9 | 0.0    | 13.5 | 0.0        | 41.0 | 13.3       | 3.4        | 0.0  |
| Average    |         |              |                    |       | 31,416  | 106   | 1,080,187 | 1,121,708 | 2.73   | 0.0 | 0.0                            | 0.1 | 2.7        | 14.6 | 0.9    | 17.6 | 11.1       | 33.4 | 12.4       | 4.3        | 2.2  |

Appendix Table 1 Average Percent Recovery (by Fishery) for the Last 5 Completed Brood years

(Chinook 1984 to 1988 broods; Coho 1986 to 1990 broods; Steelhead 1985 to 1989 broods)

Data downloaded October 1994 (through Preliminary 1993 returns)

|               |         |               |                    |       |         |        |           |           |      | Percent Recovery for All Areas |     |             |      |            |      |        |      |            |            |      |     |
|---------------|---------|---------------|--------------------|-------|---------|--------|-----------|-----------|------|--------------------------------|-----|-------------|------|------------|------|--------|------|------------|------------|------|-----|
| Coho          |         |               |                    |       | Number  |        |           |           | %    |                                |     |             |      |            |      |        |      |            |            |      |     |
|               |         |               |                    |       | AD Clip |        |           | Total     |      | Freshwater                     |     |             |      |            |      |        |      | California |            |      |     |
| Hatchery      | Species | Stock         | Release Site       | Brood | Tagged  | Only   | Untagged  | Released  | Surv | Alaska                         |     | British Col |      | Washington |      | Oregon |      | Other      |            |      |     |
|               |         |               |                    |       |         |        |           |           |      | Spt                            | Com | Spt         | Com  | Spt        | Com  | Spt    | Com  | Gillnet    | Freshwater | Spt  | Com |
| S F Klask Pd  | Coho    | Big Creek     | Tucker Cr          | 1986  | 25,223  | 515    | 113,243   | 138,981   | 3.12 | 0.0                            | 0.8 | 0.0         | 2.7  | 10.0       | 1.1  | 21.5   | 17.0 | 35.6       | 4.8        | 4.5  | 2.2 |
| S F Klask Pd  | Coho    | Sandy R       | Youngs R           | 1987  | 28,657  | 202    | 125,627   | 154,486   | 2.97 | 0.0                            | 0.0 | 0.2         | 5.5  | 10.5       | 3.5  | 18.5   | 10.8 | 43.8       | 1.9        | 4.8  | 0.9 |
| Eagle Cr NFH  | Coho    | Clackamas R E | Youngs R           | 1988  | 47,705  | 2,420  | 338,352   | 388,477   | 8.16 | 0.0                            | 0.0 | 0.0         | 1.4  | 14.1       | 1.7  | 10.0   | 7.9  | 50.0       | 7.2        | 3.9  | 3.9 |
| Eagle Cr NFH  | Coho    | Clackamas R E | Youngs R           | 1989  | 109,918 | 2,390  | 2,024,753 | 2,137,061 | 1.24 | 0.0                            | 0.0 | 0.0         | 2.2  | 15.9       | 1.0  | 26.5   | 7.6  | 40.3       | 5.9        | 0.8  | 0.0 |
| Average       |         |               |                    |       | 62,083  | 1,671  | 829,577   | 893,341   | 4.12 | 0.0                            | 0.0 | 0.1         | 3.0  | 13.5       | 2.1  | 18.3   | 8.7  | 44.7       | 5.0        | 3.1  | 1.8 |
|               |         |               |                    |       |         |        |           |           |      |                                |     |             |      |            |      |        |      |            |            |      |     |
| S F Klask Pd  | Coho    | Big Creek     | Youngs Bay         | 1990  | 27,439  | 260    | 846,753   | 674,452   | 1.13 | 0.0                            | 0.0 | 0.0         | 0.0  | 22.9       | 3.8  | 9.0    | 0.0  | 55.2       | 5.8        | 3.6  | 0.0 |
|               |         |               |                    |       |         |        |           |           |      |                                |     |             |      |            |      |        |      |            |            |      |     |
| S F Klask Pd  | Coho    | Kalama R      | Youngs Bay         | 1990  | 26,139  | 337    | 379,500   | 405,976   | 0.13 | 0.0                            | 0.0 | 0.0         | 14.3 | 11.4       | 17.1 | 0.0    | 0.0  | 45.7       | 11.4       | 0.0  | 0.0 |
|               |         |               |                    |       |         |        |           |           |      |                                |     |             |      |            |      |        |      |            |            |      |     |
| S F Klask Pd  | Coho    | Klaskanine R  | Youngs Bay         | 1990  | 52,490  | 537    | 350,199   | 403,226   | 3.48 | 0.0                            | 0.0 | 0.1         | 2.9  | 14.2       | 5.7  | 9.2    | 0.0  | 55.4       | 7.8        | 4.8  | 0.0 |
|               |         |               |                    |       |         |        |           |           |      |                                |     |             |      |            |      |        |      |            |            |      |     |
| S F Klask Pd  | Coho    | Sandy R       | Youngs Bay         | 1990  | 53,761  | 544    | 664,314   | 718,619   | 0.03 | 0.0                            | 0.0 | 0.0         | 0.0  | 9.2        | 0.0  | 10.7   | 0.0  | 69.3       | 0.0        | 10.7 | 0.0 |
|               |         |               |                    |       |         |        |           |           |      |                                |     |             |      |            |      |        |      |            |            |      |     |
| S F Klask Pd  | Coho    | Tanner Cr     | Klaskanine R, S Fk | 1987  | 28,369  | 114    | 246,517   | 275,000   | 6.99 | 0.0                            | 0.0 | 0.0         | 2.5  | 15.1       | 1.3  | 17.0   | 16.6 | 25.7       | 8.4        | 5.1  | 6.3 |
| S F Klask Pd  | Coho    | Klaskanine R  | Klaskanine R, S Fk | 1988  | 27,126  | 64     | 752,130   | 779,320   | 5.74 | 0.0                            | 0.0 | 0.8         | 2.3  | 11.8       | 0.6  | 16.3   | 10.9 | 36.6       | 13.4       | 3.8  | 3.7 |
| S F Klask Pd  | Coho    | Sandy R       | Klaskanine R, S Fk | 1989  | 26,441  | 810    | 757,851   | 785,102   | 0.53 | 0.0                            | 0.0 | 0.0         | 0.0  | 20.6       | 1.4  | 32.6   | 5.7  | 22.0       | 17.7       | 0.0  | 0.0 |
| S F Klask Pd  | Coho    | Klaskanine R  | Klaskanine R, S Fk | 1990  | 26,387  | 538    | 626,425   | 653,350   | 3.17 | 0.0                            | 0.0 | 0.0         | 1.3  | 19.2       | 5.9  | 11.5   | 0.0  | 42.5       | 14.5       | 5.1  | 0.0 |
| Average       |         |               |                    |       | 27,081  | 382    | 595,731   | 623,193   | 4.11 | 0.0                            | 0.0 | 0.2         | 1.5  | 16.7       | 2.3  | 19.4   | 6.3  | 31.7       | 13.5       | 3.5  | 3.0 |
|               |         |               |                    |       |         |        |           |           |      |                                |     |             |      |            |      |        |      |            |            |      |     |
| Eagle Cr NFH  | Coho    | Sandy R       | Klaskanine R       | 1987  | 25,701  | 1,447  | 285,177   | 312,325   | 1.56 | 0.0                            | 0.0 | 0.0         | 4.5  | 19.7       | 2.5  | 18.5   | 15.7 | 34.2       | 2.2        | 1.0  | 3.7 |
|               |         |               |                    |       |         |        |           |           |      |                                |     |             |      |            |      |        |      |            |            |      |     |
| South Santiam | Coho    | Clackamas R L | Collawash R        | 1988  | 29,547  | 2,168  | 401       | 32,116    | 1.07 | 0.0                            | 0.0 | 0.0         | 6.9  | 6.9        | 0.0  | 20.2   | 33.4 | 22.4       | 1.0        | 4.4  | 4.7 |
| Eagle Cr NFH  | Coho    | Clackamas R L | Collawash R        | 1987  | 15,395  | 1,315  | 90        | 16,800    | 0.38 | 0.0                            | 0.0 | 0.0         | 0.0  | 13.8       | 0.0  | 44.8   | 32.8 | 0.0        | 0.0        | 8.6  | 0.0 |
| Average       |         |               |                    |       | 22,471  | 1,742  | 246       | 24,458    | 0.73 | 0.0                            | 0.0 | 0.0         | 3.5  | 10.4       | 0.0  | 32.5   | 33.1 | 11.2       | 0.5        | 6.5  | 2.4 |
|               |         |               |                    |       |         |        |           |           |      |                                |     |             |      |            |      |        |      |            |            |      |     |
| Sandy         | Coho    | Sandy R       | Cedar Cr (Sandy R) | 1986  | 237,559 | 11,765 | 757,485   | 1,006,809 | 8.82 | 0.0                            | 0.0 | 0.1         | 2.5  | 9.4        | 2.0  | 12.6   | 22.4 | 23.3       | 26.0       | 1.2  | 0.8 |
| Sandy         | Coho    | Sandy R       | Cedar Cr (Sandy R) | 1987  | 134,253 | 2,034  | 924,257   | 1,060,544 | 2.35 | 0.0                            | 0.0 | 0.0         | 9.8  | 17.6       | 2.3  | 20.4   | 15.0 | 5.0        | 24.8       | 2.1  | 3.0 |
| Sandy         | Coho    | Sandy R       | Cedar Cr (Sandy R) | 1988  | 180,411 | 8,913  | 766,028   | 955,352   | 4.11 | 0.0                            | 0.0 | 0.0         | 2.1  | 15.9       | 1.5  | 13.9   | 18.0 | 12.1       | 34.0       | 1.4  | 1.1 |
| Sandy         | Coho    | Sandy R       | Cedar Cr (Sandy R) | 1989  | 209,698 | 10,535 | 235,828   | 456,061   | 3.08 | 0.0                            | 0.0 | 0.1         | 1.6  | 12.5       | 0.3  | 28.3   | 7.3  | 6.7        | 43.0       | 0.4  | 0.0 |
| Sandy         | Coho    | Sandy R       | Cedar Cr (Sandy R) | 1990  | 225,775 | 1,978  | 809,529   | 1,037,280 | 0.07 | 0.0                            | 0.0 | 0.0         | 0.1  | 34.5       | 0.3  | 9.4    | 0.0  | 0.7        | 54.7       | 0.3  | 0.0 |
| Average       |         |               |                    |       | 197,539 | 7,045  | 688,825   | 903,209   | 3.69 | 0.0                            | 0.0 | 0.0         | 3.2  | 18.0       | 1.3  | 16.9   | 12.5 | 9.6        | 36.5       | 1.1  | 0.9 |
|               |         |               |                    |       |         |        |           |           |      |                                |     |             |      |            |      |        |      |            |            |      |     |
| Trojan Pond   | Coho    | Sandy R       | Columbia R         | 1989  | 27,206  | 834    | 92,615    | 120,655   | 0.20 | 0.0                            | 0.0 | 0.0         | 0.0  | 36.4       | 0.0  | 34.6   | 16.4 | 10.9       | 1.8        | 0.0  | 0.0 |



Appendix Table 1 Average Percent Recovery (by Fishery) for the Last 5 Completed Brood years

(Chinook 1984 to 1988 broods, Coho 1986 to 1990 broods; Steelhead 1985 to 1989 broods)

Data downloaded October 1994 (through Preliminary 1993 returns)

|                  |         |             |                         |       |         |       |           |           |        |     | Percent Recovery for All Areas |     |            |      |        |      |            |         |            |      |     |
|------------------|---------|-------------|-------------------------|-------|---------|-------|-----------|-----------|--------|-----|--------------------------------|-----|------------|------|--------|------|------------|---------|------------|------|-----|
|                  |         |             |                         |       | Number  |       |           |           |        | %   |                                |     |            |      |        |      |            |         |            |      |     |
| Coho             |         |             |                         |       | AD Clip |       | Total     |           | Alaska |     | Britsh Col                     |     | Washington |      | Oregon |      | Freshwater |         | California |      |     |
| Hatchery         | Species | Stock       | Release Site            | Brood | Tagged  | Only  | Untagged  | Released  | Spt    |     | Com                            | Spt | Com        | Spt  | Com    | Spt  | Com        | Gillnet | Freshwater | Spt  | Com |
| Wahkeena Pd      | Coho    | Tanner Cr   | Wahkeena Pond           | 1986  | 32,132  | 477   | 31,566    | 64,175    | 0.00   | 0.0 | 0.0                            | 0.0 | 0.0        | 0.0  | 0.0    | 0.0  | 0.0        | 0.0     | 0.0        | 0.0  |     |
| Wahkeena Pd      | Coho    | Tanner Cr   | Wahkeena Pond           | 1987  | 28,944  | 145   | 570,909   | 599,998   | 0.00   | 0.0 | 0.0                            | 0.0 | 0.0        | 0.0  | 0.0    | 0.0  | 0.0        | 0.0     | 0.0        | 0.0  |     |
| Wahkeena Pd      | Coho    | Sandy R     | Wahkeena Pond           | 1988  | 13,117  | 184   | 1,039,765 | 1,053,066 | 6.67   | 0.0 | 0.0                            | 0.0 | 0.5        | 16.7 | 1.1    | 5.8  | 4.6        | 35.9    | 28.0       | 3.2  | 4.2 |
| Wahkeena Pd      | Coho    | Tanner Cr   | Wahkeena Pond           | 1989  | 29,975  | 1,465 | 1,066,804 | 1,100,244 | 0.02   | 0.0 | 0.0                            | 0.0 | 0.0        | 0.0  | 33.3   | 0.0  | 0.0        | 0.0     | 33.3       | 0.0  | 0.0 |
| Wahkeena Pd      | Coho    | Tanner Cr   | Wahkeena Pond           | 1990  | 28,073  | 1,015 | 1,670,912 | 1,900,000 | 0.35   | 0.0 | 0.0                            | 0.0 | 4.2        | 30.7 | 2.9    | 13.7 | 0.0        | 28.4    | 14.2       | 6.0  | 0.0 |
| Average          |         |             |                         |       | 26,448  | 657   | 916,391   | 943,497   | 1.41   | 0.0 | 0.0                            | 0.0 | 1.6        | 15.8 | 12.4   | 6.5  | 1.5        | 21.4    | 25.2       | 14.2 | 1.4 |
|                  |         |             |                         |       |         |       |           |           |        |     |                                |     |            |      |        |      |            |         |            |      |     |
| Summer Steelhead |         |             |                         |       |         |       |           |           |        |     |                                |     |            |      |        |      |            |         |            |      |     |
| Irignon          | STS     | Imnaha R    | Sheep Cr (Grande Ronde) | 1985  | 54,290  | 576   | 80,530    | 115,396   | 0.80   | 0.0 | 0.0                            | 0.0 | 0.0        | 0.0  | 0.0    | 0.0  | 35.2       | 64.8    | 0.0        | 0.0  |     |
| Irignon          | STS     | Imnaha R    | Sheep Cr (Grande Ronde) | 1986  | 47,636  | 3,461 | 42,441    | 93,738    | 0.19   | 0.0 | 0.0                            | 0.0 | 0.0        | 0.0  | 0.0    | 0.0  | 41.1       | 58.9    | 0.0        | 0.0  |     |
| Irignon          | STS     | Imnaha R    | Sheep Cr (Grande Ronde) | 1987  | 54,874  | 741   | 191,379   | 246,984   | 0.55   | 0.0 | 0.0                            | 0.0 | 0.6        | 0.0  | 0.0    | 0.0  | 21.9       | 77.5    | 0.0        | 0.0  |     |
| Irignon          | STS     | Imnaha R    | Sheep Cr (Grande Ronde) | 1988  | 54,696  | 1,078 | 193,684   | 249,458   | 0.25   | 0.0 | 0.0                            | 0.0 | 0.0        | 0.0  | 0.0    | 0.0  | 32.0       | 68.0    | 0.0        | 0.0  |     |
| Irignon          | STS     | Imnaha R    | Sheep Cr (Grande Ronde) | 1989  | 52,527  | 788   | 198,270   | 249,563   | 0.99   | 0.0 | 0.0                            | 0.0 | 0.0        | 0.0  | 0.0    | 0.0  | 39.7       | 60.3    | 0.0        | 0.0  |     |
| Average          |         |             |                         |       | 52,845  | 1,324 | 136,861   | 191,030   | 0.56   | 0.0 | 0.0                            | 0.0 | 0.1        | 0.0  | 0.0    | 0.0  | 0.0        | 34.0    | 65.9       | 0.0  | 0.0 |
|                  |         |             |                         |       |         |       |           |           |        |     |                                |     |            |      |        |      |            |         |            |      |     |
| Irignon          | STS     | Wallowa R   | Spring Cr (Wallowa R)   | 1985  | 107,435 | 7,129 | 79,968    | 194,552   | 1.41   | 0.0 | 0.0                            | 0.0 | 0.2        | 0.0  | 0.0    | 0.0  | 38.0       | 61.9    | 0.0        | 0.0  |     |
| Irignon          | STS     | Wallowa R   | Spring Cr (Wallowa R)   | 1986  | 196,485 | 4,632 | 388,001   | 589,118   | 0.79   | 0.0 | 0.0                            | 0.0 | 0.0        | 0.0  | 0.0    | 0.0  | 53.1       | 46.9    | 0.0        | 0.0  |     |
| Irignon          | STS     | Wallowa R   | Spring Cr (Wallowa R)   | 1987  | 158,709 | 2,875 | 380,841   | 522,425   | 0.55   | 0.0 | 0.1                            | 0.0 | 0.5        | 0.0  | 0.0    | 0.0  | 34.6       | 64.9    | 0.0        | 0.0  |     |
| Irignon          | STS     | Wallowa R   | Spring Cr (Wallowa R)   | 1988  | 157,015 | 5,225 | 388,636   | 550,878   | 0.20   | 0.0 | 0.1                            | 0.0 | 0.0        | 0.0  | 0.0    | 0.0  | 37.5       | 62.4    | 0.0        | 0.0  |     |
| Irignon          | STS     | Wallowa R   | Spring Cr (Wallowa R)   | 1989  | 158,109 | 1,909 | 140,909   | 300,927   | 0.88   | 0.0 | 0.2                            | 0.0 | 0.1        | 0.0  | 0.0    | 0.0  | 42.6       | 57.0    | 0.0        | 0.0  |     |
| Average          |         |             |                         |       | 155,951 | 4,354 | 271,275   | 431,580   | 0.77   | 0.0 | 0.1                            | 0.0 | 0.2        | 0.0  | 0.0    | 0.0  | 41.2       | 58.6    | 0.0        | 0.0  |     |
|                  |         |             |                         |       |         |       |           |           |        |     |                                |     |            |      |        |      |            |         |            |      |     |
| Oak Springs      | STS     | Umatilla R  | Umatilla R              | 1987  | 58,067  | 685   | 2,554     | 61,306    | 0.53   | 0.0 | 0.0                            | 0.0 | 0.5        | 0.0  | 0.0    | 0.0  | 24.7       | 74.8    | 0.0        | 0.0  |     |
| Oak Springs      | STS     | Umatilla R  | Umatilla R              | 1988  | 52,726  | 8,131 | 581       | 59,438    | 0.05   | 0.0 | 0.0                            | 0.0 | 0.0        | 0.0  | 0.0    | 0.0  | 0.0        | 100.0   | 0.0        | 0.0  |     |
| Oak Springs      | STS     | Umatilla R  | Meacham Cr              | 1989  | 56,034  | 1,984 | 1,653     | 59,671    | 0.64   | 0.0 | 0.0                            | 0.0 | 0.0        | 0.0  | 0.0    | 0.0  | 24.7       | 75.3    | 0.0        | 0.0  |     |
| Average          |         |             |                         |       | 55,609  | 2,933 | 1,596     | 60,138    | 0.41   | 0.0 | 0.0                            | 0.0 | 0.2        | 0.0  | 0.0    | 0.0  | 16.5       | 83.4    | 0.0        | 0.0  |     |
|                  |         |             |                         |       |         |       |           |           |        |     |                                |     |            |      |        |      |            |         |            |      |     |
| Winter Steelhead |         |             |                         |       |         |       |           |           |        |     |                                |     |            |      |        |      |            |         |            |      |     |
| Marion Forks     | STW     | N Santiam R | Green Peter Res         | 1985  | 19,838  | 435   | 0         | 20,273    | 0.00   | 0.0 | 0.0                            | 0.0 | 0.0        | 0.0  | 0.0    | 0.0  | 0.0        | 0.0     | 0.0        | 0.0  |     |
|                  |         |             |                         |       |         |       |           |           |        |     |                                |     |            |      |        |      |            |         |            |      |     |
| Marion Forks     | STW     | N Santiam R | Pyramid Cr              | 1985  | 19,866  | 551   | 0         | 20,417    | 0.00   | 0.0 | 0.0                            | 0.0 | 0.0        | 0.0  | 0.0    | 0.0  | 0.0        | 0.0     | 0.0        | 0.0  |     |
|                  |         |             |                         |       |         |       |           |           |        |     |                                |     |            |      |        |      |            |         |            |      |     |
| Marion Forks     | STW     | N Santiam R | Quartzville Cr          | 1985  | 19,388  | 1,071 | 0         | 20,459    | 0.00   | 0.0 | 0.0                            | 0.0 | 0.0        | 0.0  | 0.0    | 0.0  | 0.0        | 0.0     | 0.0        | 0.0  |     |